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EFFECTIVENESS OF PROGRAMS FOR THE PROTECTION OF CHESAPEAKE BAY

HEARING BEFORE THE SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION OF THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE ONE HUNDREDTH CONGRESS SECOND SESSION

SEPTEMBER 20, 1988

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EFFECTIVENESS OF PROGRAMS FOR THE PROTECTION OF CHESAPEAKE BAY

TUESDAY, SEPTEMBER 20, 1988

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:38 a.m., in room 406, Dirksen Senate Office Building, Hon. George J. Mitchell [chairman of the subcommittee] presiding.

Present: Senators Mitchell, Chafee, and Stafford.

Also present: Senators Mikulski, Warner, Sarbanes, and Tribble.

OPENING STATEMENT OF HON. GEORGE J. MITCHELL, U.S. SENATOR FROM THE STATE OF MAINE

Senator MITCHELL. The subcommittee will please come to order.

Good morning, ladies and gentlemen, and welcome to this hearing on programs for the protection of the Chesapeake Bay. For over a decade, there has been a concerted effort to understand and protect the unique and irreplaceable natural resource we know as the Chesapeake Bay.

The bay program began in response to sharp declines in environmental quality. It has evolved from a research effort into a comprehensive and coordinated initiative to protect the water quality and living resources of the bay.

Many of us here played some role in supporting the development of the bay program. State officials, environmental organizations, research scientists, and Members of Congress all contributed to this program.

In opening this hearing, however, I would be remiss if I did not mention one person who is not here but who perhaps more than any other single individual helped forge the consensus on the need for action to protect the bay and fought to build the protection program which is in place today. That is, of course, the distinguished former Senator from Maryland, Charles "Mac" Mathias, who served his State and the Nation with such distinction for many years and was a leader in the bay protection efforts.

His efforts are being carried on now by the two Senators representing Maryland, Senators Sarbanes and Mikulski, and I am pleased that they will be with us today, as well as the two distinguished and very able Senators from the Commonwealth of Virginia, Senators Warner and Tribble. I am very pleased to welcome them here today as well.

Today's hearing is an opportunity to review several important aspects of the bay program. This subcommittee has jurisdiction over the Clean Water Act. The amendments to the act passed last year over the President's veto provided new authority for EPA's Chesapeake Bay Office and for grants to bay area States.

The Clean Water Act amendments also established national programs for control of toxic pollutants in water and control of non-point sources of water pollution. Effective implementation of these new programs is essential in the cleanup of the bay, and the status of these programs in bay area States can give us a sense of how they are likely to be working nationwide.

Another important objective of this hearing is to review the progress of implementation of the Chesapeake Bay Agreement. The agreement establishes an ambitious set of goals for pollution control. We need to know the progress being made toward these goals, and if problems have developed, we need to consider whatever changes are needed to get the program back on track.

Finally, all Americans have been reminded over this past summer of how fragile our marine and estuarine waters are and how easily they can become polluted. Medical wastes closed beaches along the eastern seaboard; there is a large dead zone in the Gulf of Mexico; and vital estuaries of the West Coast, including Santa Monica Bay, San Francisco Bay, and Puget Sound, are staggering under a growing load of toxic contaminants.

We have made some progress in responding to these problems in this Congress, and I plan to continue that effort in the coming Congress, the voters of Maine and God willing. In many ways, the Chesapeake Bay is ahead of other parts of the country in recognizing the value of coastal resources and the threat of coastal pollution.

I hope that our witnesses will consider their experience in protection of the bay and give us their insights on how we might apply the lessons learned in the bay program to efforts to protect coastal waters in other parts of the country.

In closing this statement, I want to again welcome to the subcommittee Senators Mikulski, Sarbanes, Warner, and Tribble. While they do not sit on this subcommittee, they do have a special interest in the Chesapeake Bay. Senators Warner and Mikulski are members of the full committee, and I am especially pleased to have them join the subcommittee here today to participate in this hearing.

Under the rules of the subcommittee, we proceed to opening statements and questions in order of appearance by the Senators, and I will use that practice to recognize the Senators present for opening remarks.

Senator Sarbanes, we are very pleased to have you here. Welcome, and we look forward to your statement and participation.

OPENING STATEMENT OF HON. PAUL S. SARBANES, U.S. SENATOR FROM THE STATE OF MARYLAND

Senator SARBANES. Thank you very much, Mr. Chairman, for convening this hearing on the on-going efforts to clean up one of our Nation's greatest natural treasures, the Chesapeake Bay, and

for extending to me the invitation to sit with the subcommittee on this important occasion.

At the very outset, I would especially like to commend you and the other members of the subcommittee for your leadership on the Clean Water Act last year which authorized for the first time, the Chesapeake Bay program and continued the sewage treatment construction program, a vital part of a multi-State effort to improve the water quality of the Chesapeake Bay.

I must say, Mr. Chairman, that you have assumed the mantle of leadership in the environmental area which was carried by your predecessor, Senator Muskie, and people look to you, not only in Maryland, but all across the country for your very strong and effective leadership on environmental issues.

We have come a long way since the first Chesapeake Bay agreement was signed in the summer of 1983, initiating the cooperative Federal-State effort to clean up the bay. Over the past four years, remarkable progress has been made in laying the groundwork for the restoration, protection, and enhancement of the bay, and I want to take this opportunity to commend the jurisdictions involved, the three States, Maryland, Pennsylvania, and Virginia, the District of Columbia, and the local jurisdictions, various citizens groups, and the many organizations and individuals that are involved in this effort.

An interstate and Federal-State management structure is in place, including a memorandum of understanding between the EPA and other major Federal agencies, outlining responsibilities for the bay program. The States have adopted far-reaching initiatives and activities that are now under way, many of them involving a very substantial commitment of resources.

The imaginative and innovative techniques that are being used are most impressive. Governor Schaefer and his people in Maryland, for example, have put together a pamphlet, "Ten Ways You Can Help Clean Up the Bay," which is being distributed all across our State at not only every seafood festival but every festival of any sort in order to draw people into this effort.

The bay area congressional delegation here in the Congress has worked closely together to protect and enhance funding for the Federal agencies involved in the bay program. There is strong public support and a high degree of cooperation and coordination among all parties. Indeed, this program has been heralded as a model for other estuaries around the country.

With the signing of the Chesapeake Bay Agreement last December, the bay area States, Pennsylvania, Maryland, and Virginia, the District of Columbia, the Chesapeake Bay Commission, and the EPA representing the Federal Government—all of them signatory parties—took an important step forward in the restoration effort. This landmark agreement established new initiatives and specific goals, deadlines and objectives for addressing key issues such as nutrient and toxic pollution, the decline of the bay's aquatic resources, population growth and land use—all objectives which will set the course of efforts over the next several years.

Achieving the agreement's goals, including the extremely important commitment to achieve a 40 percent reduction of nitrogen and phosphorous loads to the bay by the year 2000, will require a sus-

tained effort on the part of all participants as well as the commitment of significant financial resources.

Mr. Chairman, the message that I hope this hearing will leave with all parties and from my perspective, particularly with respect to EPA and the Federal agencies, is that we in the Congress are extremely interested in the progress of this program. Although the committee could not accommodate all the Federal agencies—the Department of Agriculture, NOAA, the Fish and Wildlife Service, the Army Corps of Engineers, the Department of Defense, the Geological Survey—which are involved in the bay restoration effort at this hearing, those agencies should bear in mind that their important role in the bay cleanup is well known and is being closely observed.

We intend to press all involved agencies and parties to ensure that all the programs and activities of the new bay agreement are being effectively implemented and coordinated.

Mr. Chairman, I am particularly gratified that we have such a strong panel to begin this hearing and that the Administrator of the EPA, Lee Thomas, who has done such an effective job, in my view, will follow on, and that we will then have three very able people involved in the private sector efforts with respect to the bay cleanup program.

Again, I want to reiterate my appreciation to you, Mr. Chairman, for convening this hearing and for your interest in this matter.

Senator MITCHELL. Thank you very much, Senator Sarbanes.

The Commonwealth of Virginia has been distinguished throughout our Nation's history for the quality of its public servants, and today, that distinction continues with two of the most able and effective Members of the Senate delegation which represents the Commonwealth with great energy and distinction. We are pleased to have them both here today. I would like to call first on Senator Warner for his statement.

STATEMENT OF HON. JOHN W. WARNER, U.S. SENATOR FROM THE COMMONWEALTH OF VIRGINIA

Senator WARNER. Thank you, Mr. Chairman.

I join you in welcoming this panel. Each of them has given a good deal of leadership to this issue.

I reflect back some 10 years ago, when I was first privileged to come to the United States Senate, working with Senator Mathias on this issue, and, now, we continue forth.

We welcome our good friend, Senator Mikulski, who has just joined us.

The opportunity today to continue the congressional participation in this Federal, State, and public partnership, particularly to examine the progress made since the adoption of the 1987 Bay Agreement last December is a most useful step. I join in welcoming you all.

I want to also note the presence of Monica Healy. Prior to her present association with the Governor of Maryland, she was very active with Senator Mathias. You switched politics, but you are still loyal to the bay, Monica, and we appreciate your talent.

As a partnership, States are charged with implementing the goals of the Bay Agreement through their individual regulatory programs. I applaud my chief executive, Governor Baliles, for efforts to ban the sale of laundry detergents containing phosphates and to severely restrict the use of marine paints containing the toxic compound TBT.

At the Federal level, President Reagan has been steadfast in fulfilling his 1984 State of the Union pledge to restore the bay by providing needed financial and technical resources. I recall very vividly going with Senator Mathias to see the President and working with the Senator in preparing the recommendation for inclusion in that State of the Union address.

Lee Thomas, as the coordinator of Federal agencies involved with the bay program, has maintained the Federal focus over the years.

To our Governors and the public who have so faithfully supported this program at the grass roots level, I pledge to continue working with my colleagues here in the Senate for EPA's matching grant program and to begin the non-profit pollution control program. Federal research funds are critical to ensuring that we are implementing the most efficient and cost effective answers to the complex problems of the bay's fragile environment.

In my role as a member of this committee and as the ranking minority member of the Senator Armed Services Committee, I will work to demand that Federal facilities, comprising mostly the 67 military installations within the Chesapeake Bay region, comply with the Clean Water Act.

Last July, Senator Lautenberg and I held an oversight hearing on the Federal facilities' compliance with Superfund and RCRA laws. I commend now the Navy for assigning Admiral Toppas to coordinate the Navy's role in the bay program. At that time, I requested that the Army follow the Navy's lead to coordinate environmental programs at their end. I am still hopeful that they will soon inform the Congress of a program comparable to that of the Navy.

I thank the Chair. Again, I say to our distinguished chairman, his credentials in the area of environment have as much or more credibility than most here, and I am pleased to have you join in this effort.

Senator MITCHELL. Thank you.

Senator WARNER. And I welcome my distinguished ranking member, Senator Stafford.

Senator MITCHELL. Thank you very much, Senator Warner.
Senator Tribble?

OPENING STATEMENT OF HON. PAUL S. TRIBLE, U.S. SENATOR FROM THE COMMONWEALTH OF VIRGINIA

Senator TRIBLE. Mr. Chairman, I, too, want to thank you for your continuing leadership in preserving and protecting our environment.

I remember well your chairing the hearings when we first tackled the question of organotin paints and the threat they posed to our marine environment. Without your strong support, the bill that I offered which now bans the use of those paints would not

have passed the Congress. I thank you for your continuing commitment to the environment and especially to our Chesapeake Bay.

Without question, the Chesapeake Bay is a national treasure and a resource of the greatest significance. The bay provides food, jobs, transportation, and recreation to millions. Those benefits are felt far beyond its shores and far beyond the communities of Maryland and Virginia.

Unfortunately, a dramatic increase in population and in man's use and abuse of the bay have taken a toll. That is why it is so evident that a determined and cooperative effort to clean up the bay is essential.

Much has been accomplished. There is much that remains to be done.

I want to applaud the leadership of our Governor and his predecessor. I want to applaud the leadership of the Governors of Maryland, Pennsylvania, and Mayor Barry. I want to recognize, too, the leadership of Delegate Tayloe Murphy, my Delegate as a resident of the northern neck of Virginia. He is someone who has dedicated his life to enhancing the waterways of Virginia.

I want to pledge my continued efforts as a public office holder or as a private citizen, whatever the case might be. I will continue to do all I can to enhance the Chesapeake Bay, on the shores of which I grew up, a body of water that I love very dearly.

I have a detailed statement which I will spare you, Mr. Chairman, but I would ask that the statement which addresses in some specific measure the problems and the possibilities for the bay be made a part of the record at this point.

Senator MITCHELL. Thank you very much, Senator Tribble.
[Senator Tribble's statement follows:]

OPENING STATEMENT OF HON. PAUL S. TRIBBLE, U.S. SENATOR FROM THE
COMMONWEALTH OF VIRGINIA

Good morning. Mr. Chairman, I want to extend my sincere appreciation to you and your committee for conducting this important hearing to review the progress of programs to clean up and restore the Chesapeake Bay. I applaud your efforts and am very pleased to participate in this proceeding.

Without question, the Chesapeake Bay is a national treasure and a resource of great significance. The bay provides Virginians and Americans with food, jobs, transportation and recreation. These benefits are felt far beyond its waters and the communities of its shores. Unfortunately, the dramatic increase in population along the shores of the bay and man's use and abuse of its bounty have taken a toll on the bay system. It has become evident that a determined and cooperative effort to clean-up the bay is necessary.

These cleanup activities are some of the goals that must be included in any new bay agreement. They are fundamental to restoration of the bay, our Nation's most productive and precious estuary.

One major concern in the bay clean-up has been toxics. The accumulation of toxic substances involve not only the immediate threat to the public health and health of marine life, but also the long-term threat of those substances accumulating in the sediments.

In response to this very serious threat to the Chesapeake Bay, as well as America's aquatic environment, I introduced the "Organotin Antifouling Paint Control Act, of 1988" To suspend the use of highly toxic marine paints containing organotin until EPA determines they can be safely used. This provides a uniform national response in the fight to protect our nation's waters. I was pleased that President Reagan wholeheartedly supported this measure and signed the legislation into law earlier this year.

This year could be a decisive for the Chesapeake Bay. It is the year the 1983 bay agreement must be renewed, and that agreement will literally determine the fate of the bay.

Despite the progress to date, the bay remains embattled. Each day agricultural and urban runoff, along with pollution from industrial facilities and sewage-treatment plants, assaults it. Excessive amounts of nutrients and toxic chemicals continue to threaten its priceless resources.

As a result, recreational activities have been curtailed and strains increased on the watermen who depend on the bay for their livelihood. We need to act decisively and promptly to reverse the decline and begin the process of upgrading the bay's water quality.

A number of steps can be taken immediately. First, we need to continue to upgrade enforcement of the State's pollution discharge elimination system. The Clean Water Act gives the States authority to regulate discharges by means of permits. This permit process needs to be more systematic. Second, we must move ahead with superfund cleanup. The cleanup of toxic waste sites will reduce runoff into our waterways and contribute measurably to a healthier bay.

I am pleased that the Commonwealth of Virginia is addressing the bay's long ignored environmental problems. Virginia was the first State in the country to enact legislation, restricting the use of tributyltin paints, in order to protect her creeks, rivers, bays and ocean. Maryland, and several other States have since taken similar action.

Nutrients are also a threat to the health of the bay. It is encouraging that the signatories of the bay agreement included a deadline of July 1988, to begin to implement a bay-wide plan to achieve a 40% reduction to nitrogen and phosphorus by the year 2000.

It is vitally important that a unified effort to clean up the bay continue. It is essential that Virginia, Maryland, Pennsylvania, the District of Columbia, EPA, and the Chesapeake Bay Commission continue to meet the goals of the Chesapeake Bay agreement, and encourage neighboring States to take an active role in controlling pollution in the headwaters of streams that wind their way to the bay. The commitment to control "point source" and "non-point source" pollution must continue.

I am excited about the progress we have made in our clean up efforts and look forward to hearing from those present today about the goals for continued progress. These goals are fundamental to the restoration of the bay, our Nation's most productive and precious estuary.

Senator MITCHELL. We are pleased to have with us Senator Mikulski who, as a member of this committee, has been vigorous in her efforts on behalf of the bay and protection of the natural environment nationwide as well.

Senator Mikulski?

OPENING STATEMENT OF HON. BARBARA A. MIKULSKI, U.S. SENATOR FROM THE STATE OF MARYLAND

Senator MIKULSKI. Thank you very much, Mr. Chairman, and thank you for organizing this hearing on the bay and getting the bay Senators together to do a review and oversight on the status of the program.

As you know, I hold the Mathias seat in the United States Senate, and when I took over that job, Senator Mathias left me a three-point legacy. One was to continue his aggressive fight in the area of arms control. Second was to remember his tireless advocacy in the area of civil rights. Then came the issue that was nearest and dearest to his heart which was to clean up and preserve the Chesapeake Bay, because, whether it was Senator Mathias or Senator Mikulski or all the people of Maryland, we know that the Chesapeake Bay is a very important body of water.

For those of us who live in Maryland, it is the landmark that gives our State her identity. For New York, it might be the Empire State Building or Lady Liberty. For California, it might be the

Golden Gate Bridge. For those of us from the Delmarva area, we know that it is the Chesapeake Bay.

The Chesapeake Bay is part of our heart and part of our soul, and when anything happens to the bay, it happens to all of Maryland. So, if we see medical waste coming up on our shores, we feel that garbage has been dumped on our own front lawn. When we hear about the decline of species, whether it is our crabs or our oysters or our clams, we feel that something has happened to all of us.

We worry about the bay as if it were a neighborhood and as if the bay itself and the people who live and work on it were our neighbors. It is part of our psychic link.

That is why we feel so strongly and so passionately about its care and preservation. It is the center of our economic activity from the watermen to the marina operators, from the restaurant waiter in Baltimore's inner harbor to the ship pilot coming through the C&D Canal. We know in Maryland that good environment is good business.

But we know that the good life is in danger, and that is why we are conducting this hearing today. We know and could detail in numbers and statistics what is happening to our bay, and I think that will come out. We also know some of the causes of the bay's problems.

But we are not uncaring people. Since 1987, the United States Congress has put \$87 million of Federal money into the EPA program. Now, we need to see where we are.

A lot of work has gone on between members of committees and the executive branch, but our question is, is the bay cleaner than it was in 1977? Are we running as fast as we can just to stay in place, or are we actually making progress? Is cleaning up the bay like a treadmill where somebody else is always speeding up the process and we just can't keep up? What are we doing that is right, and where are we missing the boat?

That is what this hearing is all about, to evaluate the status, the tools that we are using, and make sure not only do we get a dollar's worth of cleanup for a dollar's worth of taxpayers' money but to make sure that we are on the right track. I happen to believe that cleaning up the bay is not only going to be the result of science and technology, but it is going to be the result of people, people willing to work together and not waiting for rules and regulations and the biologists to tell us what to do.

That is why I look forward to listening to our Governors, our distinguished Mayor of the District of Columbia, the delegate to the Bay Commission, Lee Thomas, and all the others.

Thank you, Mr. Chairman.

Senator MITCHELL. Thank you very much, Senator Mikulski.

Finally, we are pleased to welcome the distinguished former chairman of the full committee, a man who symbolizes the reality that combatting pollution and protecting our environment is non-partisan in nature, someone who has done more than any other person to protect the American environment in this decade. I am pleased to welcome the former chairman of the full committee, Senator Stafford.

OPENING STATEMENT OF HON. ROBERT T. STAFFORD, U.S.
SENATOR FROM THE STATE OF VERMONT

Senator STAFFORD. Thank you very much, Mr. Chairman, for those kind words. I will say that whatever successes happened on my watch would not have happened without your very active support, participation, and leadership.

Mr. Chairman, I am going to continue, I hope, my reputation for few words by simply saying this morning that I agree with Senator Tribble that the Chesapeake Bay is a treasure. It is a treasure for the Nation, a treasure for the States that surround it, and probably nobody in this room has spent more time on it in the last 28 years than the Senator from Vermont.

I have been able each weekend from April until December that I have not had to go somewhere else, to escape to at least a weekend on the Chesapeake Bay. So, I have observed the bay close up for 28 years now. Strictly from a layman's observation as to where we are today, I think, obviously, success in preserving and cleaning up the bay depends upon the joint efforts of the Federal Government and all three of the States that immediately have shorelines.

It seems to me there are three areas that need to be addressed, and I am sure you are as well aware of them as I am. One is the pollutants that are getting into the bay from various sources. Another is simply soil run-off from some of the agricultural operations on the large rivers that flow into the bay. Finally, my personal view is that probably over fishing has contributed to the decline of various aquatic life that have been reaped in the bay over the years. That, again, is something that I know the States have addressed as far as the stripers are concerned, but maybe the oysters and crabs are going the same way unless the States consider taking the same kind of steps there.

In any event, as long as I am a Member of this body, I will do everything I can to help the bay. Since that won't be for very much longer, I will be happy to continue my efforts in a private capacity or however I can after January 3 of this coming year.

Thank you, Mr. Chairman.

Senator MITCHELL. As you cruise the bay next year, you can be an inspector general on behalf of this committee.

Fortunately, you gentlemen have been before Congress often enough to know that those persons scheduled to be the first witnesses at a 9:30 hearing usually don't get to say anything until after 10:00. We do apologize, but, as you know, it is important for the Members to make their views clear at the outset.

I am pleased to now begin the testimony with the Honorable Gerald Baliles, the Governor of the Commonwealth of Virginia, Chairman of the Chesapeake Bay Executive Council, and someone whose distinction has already been recognized by his peers who have elected him to serve as Chairman of the National Governors' Association.

Governor, we are very honored to have you with us here today, and we look forward to your testimony.

STATEMENT OF HON. GERALD L. BALILES, GOVERNOR, COMMONWEALTH OF VIRGINIA AND CHAIRMAN, CHESAPEAKE BAY COMMISSION

Governor BALILES. Thank you, Senator.

Mr. Chairman and members of the committee, I am glad to be here on this occasion, but as I have indicated to some of your staff members, I must leave by about 10:15 to keep an appointment that was made long before your kind invitation. I will be glad to respond to questions before I leave or by staff members after I leave or in writing later. By agreement with my good friend Don Schaefer, all unanswerable questions will be taken by him.

Senator MITCHELL. And he is going to palm them off on Monica, so we are ready for that.

Governor BALILES. Mr. Chairman, it is said that humanity shapes itself by the decisions that shape the environment. For five years, Virginia, Maryland, Pennsylvania, the District of Columbia, and the Federal Government represented by EPA have sought to get the Chesapeake Bay back in shape.

As Chairman of the Chesapeake Bay Executive Council, I have seen the advantages of this unique partnership. I have had no better partner in this effort than my friend, the Governor of Maryland, Don Schaefer, along with Governor Casey of Pennsylvania and Mayor Barry.

We have, in effect, put the pressure on each other to produce tangible results. Accordingly, Maryland, the District, and Virginia have each banned the use of phosphate detergents. As a result, we are seeing a 35 percent decline in the amount of phosphates now entering the bay. Pennsylvania is in the process of instituting a similar ban in that State.

Maryland and Virginia are controlling the use of TBT, a highly toxic chemical commonly found in boat paint. Now, the Federal Government has joined that effort.

Pennsylvania, Maryland, and Virginia have all developed programs to retard nutrient run-off and soil erosion from farms and fields. Recently executed commitment documents contain a plan to reduce nitrogen and phosphorous by 40 percent by the year 2000.

In fact, last winter, the Virginia General Assembly recognized the threat of unlimited development in fragile shoreline areas of the bay and passed legislation to protect water quality through land use controls.

So, I believe we are headed in the right direction, but the road stretches far before us.

In December of 1987, we took another very important step forward. We reached a new agreement which builds on the historic first agreement signed nearly five years ago.

The new agreement is specific, with clear deadlines and timely commitments for action.

By July of this year, a stock assessment plan and resources management strategies, a conventional pollutant strategy, a bay-wide communication plan, a comprehensive research plan, a monitoring plan, and a nutrient reduction strategy had all been established and are being implemented. By December of this year, additional

commitments will be due, and with diligence and fortitude, they, too, will be met, and the bay will benefit.

These are the individual elements of our commitment, and they represent the actions we are now taking. In simplest terms, this means we are doing what we said we would do when we signed the new agreement, and that is all important.

The bay restoration effort must be credible, for, I assure you, the American people have acquired a heightened sensitivity to the welfare and protection of our Nation's natural resources. Whether it is the loss of trees in Yellowstone National Park, medical wastes washing up on our shorelines, or the decline of the Chesapeake Bay, the public can well distinguish between rhetoric and results.

Take, for instance, the September 12 edition of *Sports Illustrated* which includes an article entitled, "A Dry and Thirsty Land" by Penny Ward Moser. It describes the devastation of this year's drought. In the Midwest, wetlands virtually evaporated, causing an extraordinary loss of game and fish. Groundwater capabilities are lost, natural recharge water capabilities are lost, natural water filtering capacities are significantly diminished, as are the flood control capabilities of these vital ecosystems.

In the Chesapeake Bay watershed, we don't need a drought to see our wetlands disappear. In Virginia, some estimates of the loss of our non-tidal wetlands are as high as 57,000 acres or 7 percent of the total in the last 30 years.

That is why I proposed legislation to the Virginia General Assembly to discourage the avoidable elimination of wetlands. The need for this legislation is clear.

For example, when we lose the wetlands that sustain the life of the forests, we eventually lose the forests themselves which supply our paper and our furniture and which support our home building and other timber industries.

When we lose wetlands, we threaten future water resources from both a quality and a quantity perspective. They are the essentials of our quality of life.

According to Virginia's Department of Game and Inland Fisheries, a minimum of 50 percent of the fauna species known to occur in the Commonwealth utilize wetlands. Moreover, as we progress in our commitment to save the bay, we find that we have to go farther up the 19 principal rivers and 400 smaller tributaries that feed the bay to improve the quality of the water that supplies this, the largest, most valuable estuary in the United States.

That is why the 1987 agreement included a commitment to develop a bay-wide wetlands protection policy. And that is why it is essential that we take this important step in the Commonwealth.

That is why the States and the District are spending so much of their resources on this restoration effort. And that is why the partnership with the Federal Government, represented by EPA, is so logical.

Indeed, as you consider the Federal role in this partnership, I would like to commend the Administrator of EPA and his conscientious and helpful staff. The States and the District provide the overwhelming share of the financial resources, but we benefit significantly from EPA's coordinating role and its research assistance.

In fact, let me urge you to consider underwriting more of the scientific and technical research that is required to understand better this vast ecosystem we call the Chesapeake Bay.

I would be remiss if I did not mention in this context that The College of William and Mary has an outstanding facility at Gloucester Point, Virginia called the Virginia Institute for Marine Science which has initiated an intensive research program in marine pathology and toxicology.

Mr. Chairman, the bay's condition symbolizes an increasing paradox and dilemma of American public policy making. By all accounts, the public wants economic growth, or, at least, the public wants the products of economic growth — more jobs for individuals, more income for families, and general greater prosperity.

But the public does not care for the cost, a cost measured in lost rural lands, impure air and water, and damaged and declining natural resources. It is a contradiction, but we must resolve it nevertheless.

Those of us charged with policy making must not falter in the face of complexity. In the case of the Chesapeake Bay, the damage is real, and it must be stopped. The bay must be restored.

I believe that the unique cross-jurisdictional collaboration which is committed to the restoration of the Chesapeake Bay is working, but we must keep at it, year in and year out, until the job is done.

Mr. Chairman and members of the committee, thank you very much.

Senator MITCHELL. Thank you very much, Governor Baliles, for a very thoughtful statement.

The members of this panel, together with EPA Administrator Lee Thomas who is to be the next witness, and Governor Casey of Pennsylvania are the signers of the Chesapeake Bay Agreement. Governor Casey is unable to attend today's hearing. I received a letter from him indicating his regret that he cannot be with us and his strong support for the bay agreement and for protecting the bay. Governor Casey submitted written testimony which, without objection, will be included in the hearing record.

[The prepared statement of Governor Casey follows:]



COMMONWEALTH OF PENNSYLVANIA
OFFICE OF THE GOVERNOR
HARRISBURG

THE GOVERNOR

September 19, 1988

The Honorable George J. Mitchell
Chairman
Subcommittee on Environmental Protection
176 Russell Building
Washington, D.C. 20510

Dear Senator Mitchell:

I am submitting written testimony in response to the Subcommittee on Environmental Protection's September 20th oversight hearing on progress of the Chesapeake Bay Program, and request it be included in the public record of that hearing. I am disappointed my schedule does not permit me to personally testify with my colleagues, Governor Baliles and Governor Schaefer.

The Chesapeake Bay Program, including the Chesapeake Bay Agreement signed last December is a unique and valuable intergovernmental undertaking. Pennsylvania is committed to doing its part to achieve the program's goals within the timetables established in the Agreement.

While I am generally pleased with the federal support and cooperation being given to this important work, my testimony identifies a number of issues the Subcommittee should be aware of.

The work towards the restoration and ongoing protection of the Chesapeake Bay must go on. The Bay's cultural and environmental importance to our nation demands our best efforts.

Sincerely,

Robert P. Casey
Robert P. Casey
Governor

UNITED STATES SENATE
SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION

TESTIMONY OF GOVERNOR ROBERT P. CASEY
COMMONWEALTH OF PENNSYLVANIA
SEPTEMBER 20, 1988

Mr. Chairman and Members of this Subcommittee:

I am Robert P. Casey, Governor of Pennsylvania, and I thank you for the opportunity to testify on Commonwealth and intergovernmental actions to restore the Chesapeake Bay.

While the Chesapeake Bay is not geographically part of Pennsylvania, our Susquehanna River contributes 50% of the fresh water entering the Bay. A number of our counties along the Maryland border drain into the Potomac, another major Bay tributary. In total, three million Pennsylvanians live in the Bay's drainage basin - about 1/4 of the basin's population. We all share responsibility for the problems of the Bay, and must work to restore the Bay's resources just as we work to protect our own water resources. We take this responsibility seriously, as evidenced by the following examples of clean water initiatives recently undertaken in Pennsylvania.

Pennsylvania has just embarked on a 25 year, \$2.5 billion water and sewer infrastructure improvement program. An administration proposal recently enacted by the General Assembly, the Pennsylvania Infrastructure Investment Authority (PENNVEST) will combine traditional funding sources with innovative financing techniques to construct clean water infrastructure. These investments will build upon our existing accomplishments in removing pollutants from wastewater entering the Susquehanna River.

I am supporting a legislative initiative to implement a phosphate detergent ban in Pennsylvania to reduce phosphorus loadings to the Bay. I have also proposed revisions to our Erosion and Sedimentation Control Program which will newly regulate many agricultural nonpoint sources of pollution. These regulations were the subject of extensive public comment, and will be published for final rulemaking by December of this year.

Pennsylvania is committed to meeting the 40% nutrient reduction goal established by the Chesapeake Bay Agreement. This commitment is evidenced by our previous accomplishments in the Chesapeake Bay Program. Pennsylvania pioneered the development of comprehensive nutrient management programs. These programs

will serve as a model for agriculture programs to be developed by other states pursuant to Section 319 of the Clean Water Act.

We recognize, however, that much remains to be done. As part of Pennsylvania's nutrient reduction strategy, I have authorized the hiring of new staff to manage the Chesapeake Bay Financial Assistance Program in seven additional counties. This strategy identifies additional staff and program needs and establishes a schedule for their implementation. This strategy will bring us to meet the Agreement 40% nutrient reduction goal.

The Chesapeake Bay Agreement signed last December initiated an intergovernmental cleanup effort which is essential to assure the restoration of the Bay. As you are aware, the Agreement brings together municipal, state and federal agencies and state legislative representatives in this cooperative effort. But the success of our efforts is heavily dependent on the actions of Committees such as yours in the U.S. Congress.

For this reason, I welcome continued Congressional interest in the Chesapeake Bay Program, and would like to share with you Pennsylvania's perspectives on how we can work together to improve the existing program. While I agree it is important to evaluate our progress toward meeting the commitments in the Bay Agreement, I believe it is now too early to determine that progress. Within the ten months since the Agreement was signed, eleven Bay-wide strategies to fulfill Agreement commitments were recently completed. Although these strategies were developed within a very brief period, it will take additional time to implement and evaluate their effectiveness.

In Pennsylvania, we have identified several areas where congressional oversight and action can aid our efforts to accomplish the objectives of the 1987 Bay Agreement. I cite the following examples for consideration in your efforts to improve the effectiveness of current Chesapeake Bay initiatives.

Pennsylvania's component of the Bay-wide Nutrient Reduction Strategy appropriately relies on accomplishments achieved by U.S. Department of Agriculture Conservation Programs, especially the 1985 Food Security Act. This Act requires compliance with conservation standards to retain eligibility in farm subsidiary programs. A recent policy developed by the Soil Conservation Service to allow Alternate Conservation Systems may weaken the program, lowering nutrient reductions and accomplishments in conservation programs.

The Pennsylvania State Conservation Commission took action at its July 1988 meeting to oppose the use of Alternative

Conservation Systems. Concern about these systems is shared by other conservation agencies throughout the nation. I urge you to examine this policy for possible conflicts with the intent of the 1985 Food Security Act and its impact on the Chesapeake Bay Program.

I am concerned with policy established in EPA's Nonpoint Source Guidance Document, July 1987, prohibiting the use of state cost share funds to provide the required match to federal funds in the Nonpoint Source Management Program. Pennsylvania has gone on record opposing this interpretation of the Act by the Environmental Protection Agency. Others, including the Chesapeake Bay Commission, have supported Pennsylvania's position. I recommend that state cost share funds be considered as eligible match for this program.

I also recommend that Section 117 of the Clean Water Act, the Chesapeake Bay Program, be modified to require nonfederal funds as match, instead of state funds. This will allow the farmer's cost share portion toward Best Management Practices (BMP) to contribute to the program match. Currently, nearly 40% of all BMP costs are borne by the farmer. This significant investment made by the farmer should be applied to the required match for federal funds.

Even with these refinements to federal law, the parties to the Chesapeake Bay Agreement will need further assistance to assure effective implementation of the Agreement commitments. Continued federal funding for the Bay program is needed beyond the current authorization of 1990. Commitments in the 1987 Agreement obligate the states to the year 2000 and beyond. Funding for the Nonpoint Source Management Program is needed to supplement Chesapeake Bay Program funds to accomplish Agreement goals. Secretary Arthur Davis of the Pennsylvania Department of Environmental Resources has urged our congressional delegation to support funding for this essential program.

It is also important that future funding for implementation of state programs continue to flow through state agencies, and that federal agencies coordinate their efforts through the states in conformance with objectives outlined in the 1987 Agreement. Pennsylvania is opposed to the direct transfer of Section 319 funds from EPA to other federal agencies.

Continued improvement in federal/state cooperation is necessary to allow the effective implementation of the Chesapeake Bay Program. EPA must recognize the unique nature of each state implementation program, and the need for flexibility in the administration of these programs.

A recent audit report completed by EPA's Inspector General's Office demonstrated a lack of understanding of program operation at the field level. Many variables, such as weather, available technical assistance, experienced contractors and, most importantly, the economic burden on the farmer, have a tremendous impact on program accomplishments. Federal regulations geared primarily to point source control programs must be tempered to allow for the uniqueness of an agricultural nutrient control program.

With regard to the need for new initiatives to supplement those outlined in the Bay Agreement, it is Pennsylvania's position that any new initiatives should be developed in conjunction with the scheduled re-evaluation of the nutrient reduction strategy in 1991. The 1987 Agreement contains an ambitious program for states to implement in a short period of time.

I look forward to the transferal of technology and knowledge acquired in the Chesapeake Bay Program to other estuary programs. As I mentioned earlier, Pennsylvania is a pioneer in the development of comprehensive nutrient management programs. Already, we have shared our accomplishments with other interested states. The success to date, however, can be attributed largely to the support of conservation districts and their willingness to administer the program for farmers. To assure the participation of landowners and occupiers, local administration must provide the cornerstone of any program. State conservation agencies can provide the leadership to stimulate a coordinated local program.

We must all continue to work towards the restoration and ongoing protection of the Chesapeake Bay. The Bay's great cultural and environmental importance to our nation demands our best efforts.

Senator MITCHELL. I am pleased now to call upon our good friend, Governor Schaefer of Maryland, who has been before this committee before. We always look forward to hearing from him.

Senator Warner noted the presence of Monica Healy who represents the Governor here and who has represented him very well on environmental matters and was involved in this issue in her former employment with Senator Mathias.

So, Governor, we look forward very much to hearing from you, as always.

**STATEMENT OF HON. WILLIAM DONALD SCHAEFER, GOVERNOR,
STATE OF MARYLAND**

Governor SCHAEFER. Thank you very much, Senator. I appreciate that.

My good friend, Gerry, said that he may have to leave. I say that's okay; most people leave when I start to talk anyway. So, I didn't mind that at all.

I am very glad Senator Mikulski and Senator Sarbanes are here and the others members of the committee. Gerry has a unique relationship with his Senators, and so do I. Barbara and I have a close relationship; she was on the City Council when I was there many years ago. All the the Senators have been just super as far as working with me as Governor. I am most appreciative of that.

I am glad you mentioned Senator Mathias. There is a tendency every once in a while to forget Senators, Governors, and Mayors. They just sort of fade away, but the fact that you mentioned Senator Mathias and his great work that started the Chesapeake Bay cleanup, I think, is very commendable, along with Monica Healy.

Another person I think we ought to commend is Lee Thomas. He has done a super job as far as the State of Maryland is concerned and, I am sure, as far as Virginia is concerned. He has been extremely helpful to us.

I would like to use some of these charts along with my testimony.

Let's begin with this one. It says clean up the Chesapeake Bay; make the necessary decisions.

The chart is wrong. It should have said clean up the Chesapeake Bay; make the necessary tough decisions, because that is what has to be done if we are going to do the work that is necessary as far as the Chesapeake Bay is concerned.

I come to you, along with Gerry and along with the Mayor and along with the others with a real sense of urgency. I use the phrase "time is never on our side." People will say we will worry about the education of the kids five years from now, and I think about the kids right now. It is the same way with the elderly. It is right now.

It is the same way with the bay. It is now. There is an urgency.

If you have ever known what frustration is, I guess I have the greatest sense of frustration of really not knowing all the things that are so necessary to clean up the bay. When I became Governor, I knew all I had to do was to walk in and tell Monica to clean up the bay, and it is done. Then I found out how complicated it really was.

It is a complicated subject. There are no easy answers and no quick fixes. You know me; I like to get everything done in six months. I think it is going to take us about seven to clean up the bay.

In all reality, we know it will be six, seven, eight, nine, or ten years before we do anything.

Senator Mikulski asked the question, has any progress been made? Tremendous progress has been made, mainly because of this man right here who, when we were down in Virginia—I went down there thinking I was going to go down to a television show on the Chesapeake Bay Agreement, and he sat down with all of us, and he said, we have to sign this agreement. We have to come up with that first thing to make the necessary tough decisions.

It wasn't easy to get that Chesapeake Bay Agreement signed, and because of his perseverance, he was able to do it. He is a modest guy and doesn't like me to say this, but he is also head of the National Governors Association which is one of the greatest honors a Governor can have. But it was his effort that did this, and I am very pleased with that.

What is Maryland doing? Are we doing anything?

We signed the Chesapeake Bay Agreement, and that was a very important aspect. It was tough for Governor Casey. He had to make some very tough decisions. It was tough with Marion Barry. The Mayor had some very tough decisions to make, and so did Gerry about what we are going to do.

We made that commitment to the goals. Luckily, I can tell you honestly, the goals that we set forth are on target and on time.

We have strict development guidelines. In Maryland, we passed—I didn't; it was Harry Hughes—the first law. It was the critical area restriction which said that within 1,000 feet of the bay, there were restrictions on development. That was a very important law.

That was a tough decision to make. Everyone wants to buy land on the Chesapeake Bay. Everybody wants to build a house on the bay, and they want to build it right on the bay. You can't do that anymore. You just can't do it, and we are working well with that critical area restriction.

Gerry just passed some wetlands protection. We are going to pass some very tough wetlands restrictions to protect property owners. So far, we have planted thousands of feet of grass to protect the eroding shorelines.

I have watched them prepare this grass. There are all sorts of new ideas. I don't know if you remember, but when I was young, we used to tear the grass out. We took the grass out and didn't understand the ecology of the grass.

With regard to upgrading sewage treatment plants, there have been \$56 million committed by the State of Maryland this year alone. That is a very heavy commitment by a State.

These nutrients—I didn't know what that meant. I really didn't understand. Nutrients should be good for somebody. Well, they are not always so good. So, we are significantly reducing the nutrient flow into the bay.

We are talking with people in agriculture and telling them we have to be able to have the best farm practices to control run-off.

Seeing this and going around to the various areas is very important.

Let me digress a minute. There is a young lady back there named Ellie Falk. Stand up, Ellie. Ellie is responsible for this program. She hates doing this. Ell is one of the bright young ladies on the staff, and right beside her is Robin who is also a very bright young lady.

This program is called "Ten Ways to Help Maryland Clean Up the Bay." I couldn't get my staff to agree to this. They would not agree to put this thing out. I said everyone in the State of Maryland must have some ways to clean up the bay.

I used to sit and talk to people and say to them, do you know you are polluting the bay? They would say to me, I am not. I would ask, did you ever empty any pesticide in the sewer? And when they said yes, I would tell them they are destroying the bay.

So, I said let's get ten simple things, because I am not a complicated person, and the staff would not agree, the whole bunch of them. Absolutely not. I finally prevailed upon them to do this, and this is working now.

It is ten ways that everybody in the State can clean up the bay. Everyone has an opportunity, because 95 percent of the land mass eventually enters into the bay.

At first, we forgot to put on a form for asking people to send in a contribution, and people are sending in a dollar or five or ten, and Ellie is responsible for this program. If you read that, you will see that every one of us, in a way, is polluting the bay. So, we are working on that.

The Senator said something about rockfish. Yes, we lost them. We have lost them. That is one of those things called tough decisions. No one can catch them. Well, they can catch them, but they have to put them back.

By the way, you have to learn how to put a rockfish back. You don't just dump him overboard. You catch him, get a hold on him, and you gently put him back in the water. Otherwise, the stress kills them.

So, we take care of the rockfish that we catch.

I would like to make rockfish a game fish in the State of Maryland. I will tell you where the tough decision is. The tough decision is that the watermen are going to say you can't do that to us. We have to be able to harvest some of the fish. If they do, we will be right back where we were. So, it is not going to be very popular, but if you want to save the rockfish, it becomes a game fish.

It is the same thing with perch. Years ago, white perch, yellow perch—you could catch them all. You don't find them anymore. So, we have a restriction on perch.

Oysters. I went out with the watermen. They brought up the first scoop from the dredge. Every oyster on that barge was dead, every oyster on that barge. That is where the Federal Government has to help us with some money for continuing research.

We need help with coastal waters pollution. In the State of Maryland, in Ocean City, there were about two or three syringes. It wasn't a big deal, but inside, there is a lot of medical wastes coming up in the waters, and we must find a way to control that.

So, recently, we passed a very strict emergency restriction and regulations to give us the tools we need to prosecute those who dump medical wastes into the waters. We are going to find them, we are going back, and we are going to prosecute them. With a couple real heavy hits, they will stop doing that.

The second is the Clean Water Act. You know all about that. We need adequate and reliable funding for the waste water facilities. This is where we absolutely need your help. We need good Federal standards in place and, partly, funding sources.

Monica came up with the idea of using offshore oil receipts. That is her idea, and she hates me to say this, but she was the one who figured that out. So, I will give her full credit. If it passes, I take credit. If it is defeated, she takes credit.

Acid rain and pollutants. No State can act alone. We need Congressional approval on the Clean Air amendments. You know about those.

In Federal oyster research, we need some additional money in order to do oyster research, because the old way, in my opinion, is not exactly the way it should go. There are some new ideas on that. Federal monies are needed there.

These are five ways we can clean up the Chesapeake Bay. One is prevent spills. A couple weeks ago there was the breakup of a barge. It spilled 160,000 gallons of oil near the mouth of the Potomac River. It was harmful, but it was not that bad, but it did give us an idea that we need the work of the Coast Guard to improve inspections, and we need quicker and better emergency containment in the cleanup.

We also need to educate people, show them how to do cleanup, teach them how to help, and use this form that we have on a national scale. What are the ways that everybody in the Nation can help on the cleanup?

Let me just talk about something that worries me more than anything else, and that is coordination. Again, I cannot really get over to what I am saying. In the State of Maryland, we need one person who will be able to coordinate all the activities of what is going on with the cleanup of the bay, one person, almost a czar, ombudsman, whatever the term might be.

I haven't been able to think it out clearly yet, but there is so much research going on at the University of Maryland, by the individual communities, by everyone that, as Senator Mikulski said, you want to make sure that you are getting your best bang for your buck, and I am not absolutely sure that the total coordination is there.

The Federal Government can help us do that, too, by creating a Federal-State research task force to identify research priorities. What really are the priorities as far as the bay is concerned? We are doing 25, 50, or 75 things. What are the 5 most important things that we should be doing as far as the bay is concerned? We want to talk about that. We need to target our research dollars.

Everywhere I go, everyone wants more money for their project, but we must get them into the priority order of what is the most important. We need to establish a base year. Find out what the situation was in, say, 1984, compared to what it is now and what added to the pollutant problem.

Mayor Barry did a great job in stopping the spill from Blue Plains, the sewage plant that they have over there. When you stop that, you can see results.

If we could go back and see what went before, what happened, and then what the results are afterwards, like he did, we will be in better shape.

We need passage of the Marine Research Act. We hope that will be done real soon.

There are other things besides the bay. There are things called skipjacks. There are things called lighthouses. All these things are very important, and we need that—there is an American Heritage Act. All of those things are being lost. Those lighthouses are going out of existence. They are being moved from where they were, and we ought to preserve those skipjacks.

And even Smith Island. If you go on Smith Island, you go back centuries, and that is a place that absolutely should be preserved.

Take Rock Hall. I don't know if you have been up to Rock Hall. We wanted to buy a packing house and the piers up there, the last packing house and pier in that whole area—just gone. And we want to preserve those.

Jim Lighthizer who is the county executive of Anne Arundel County came up with a program for access to public places, to have a chain of access to public places rather than just build and build.

We need to coordinate land use with Federal, State, and local lands. The Federal lands, State lands, and all the local lands ought to be coordinated.

Incidentally, you talked about Superfund. Let me just ask you to push hard on Superfund. When the Navy and the Army or whatever it might be leave an area and just abandon it, that Superfund can be used to clean up the area. I specifically think about Bainbridge where an area is not being used right now. Something should be done in that area.

We need to develop a long-term comprehensive plan for the use of land and water. We need all those things as to public access to certain lands that we will lose unless the Federal, State, and locals work together.

Let me end. Can we do it? Yes, we can. But we have to do it now. We know why, we know how, we know who, we know when, and we can clean up the bay. But I will tell you right now, as Barbara said, it isn't doing it in a hit or miss fashion. It is a long-term commitment for 5, 6, 7, or 8 years of continual pressure by Congress and by the States and by the Mayors and by the people themselves to be really serious about cleaning up the bay.

It can be done. Great progress has been made with the cooperation of Pennsylvania and Virginia and D.C. We are beginning to get that great Governor up there, Governor Castle, involved in it. So, there is a regional approach.

The last thing is I don't know if you really heard, but the regional cooperation that exists between Marion and Gerry Baliles and Governor Casey and the others on a regional basis, not one State doing something but all working together, is how we are going to be able to clean up the bay.

I am going to leave too, so Marion Barry can answer all the questions. Thank you.

Senator MITCHELL. Thank you very much, Governor. As always, you got and held our attention and provided some very useful insights.

We are now very pleased to welcome the distinguished Mayor of the District of Columbia. Mr. Mayor, welcome. We look forward to hearing from you.

STATEMENT OF HON. MARION BARRY, MAYOR, DISTRICT OF COLUMBIA

Mr. BARRY. Thank you very much, Senator Mitchell and Members of the Subcommittee on Environmental Protection. We are delighted to appear before this subcommittee as the only original signatory of the 1983 Chesapeake Bay Agreement.

I would like to commend Senator Mathias who is no longer in the Senate but who has been a strong voice and who alerted us long before others did as to what we had to do to begin to clean up the Chesapeake Bay. I also certainly want to commend Senator Sarbanes and Senator Mikulski for their continued vigilance in this area. We appreciate it. The same is true of Senator Warner and Senator Tribble in Virginia.

Mr. Chairman, I enjoyed listening to Governor Schaefer and Governor Baliles. I like the title of "Governor," so I am looking forward to next year when the House and Senate pass our statehood bill. We will have a Governor, and I think I will announce my candidacy at this time.

On a very serious note, we have had excellent relationships with the States of Virginia, Maryland, and Pennsylvania, and with EPA.

Senator MITCHELL. Let me just interrupt you and say that sooner or later, we are going to pass that statehood bill, because it is the right thing to do.

Mr. BARRY. Thank you very much, Senator. I know we have the support of Senators Warner and Tribble on that subject, too.

John was born in Washington. He is a Virginian whose mother came across the river to have her baby.

Senator WARNER. That is because there weren't any hospitals that far back over in Virginia.

Mr. BARRY. Mr. Chairman, since 1964 when President Lyndon B. Johnson called the Potomac River a "national disgrace," the District of Columbia has moved forward with a comprehensive commitment to the rehabilitation and preservation of this important natural resource.

Mr. Chairman, we know that the Anacostia River runs into the Potomac and the Potomac into the Chesapeake Bay. So, we are as much responsible for helping to preserve the Chesapeake Bay as the States of Virginia, Maryland, and Pennsylvania.

I am proud to speak of the progress which has been made on the Potomac and the fact that our citizens are enjoying the fruits of our labor. Mr. Chairman, the Potomac is not clean by all standards and all measurements. Marine life is there. The fish, all species that were there earlier, are there. People can fish in the Potomac. More importantly, they can eat the fish that they catch without getting sick.

We have spent over \$700 million at our plant at Blue Plains. We have an ambitious yet doable plan for the next three or four years. Governor Schaefer has spent an additional \$382 million at our Blue Plains treatment facility to enhance our sewage capacity.

We are in a national contest at this point. We are one of two communities in the whole Nation recognized as having the most advanced waste water treatment plant in America. We are very proud of our plant. In fact, it is one of the most advanced water treatment plants in the entire world and the planet Earth.

Mr. Chairman and members of the committee, after having cleaned up the Potomac, we intend to keep it clean. We now turn our attention to the other important river in our city, the Anacostia. I foresee the day when the District of Columbia will have two major waterways with access for the citizens, with restored wildlife, with fish, marine life, and plant life.

We will be talking to Governor Schaefer about what Maryland has done and what we need to do to continue our vigilance and our efforts to clean up the Anacostia, and we intend to work on that very diligently.

Mr. Chairman and members of the committee, I am proud to report that the District has kept its end of the bargain. We are on target and on time. We have met all of our commitments. They include:

- The passage of the District of Columbia Water Pollution Control Act of 1984 to regulate the restoration of the District 'waterways for the protection of fish, aquatic life, and habitat;

- The construction of combined sewer overflow facilities on the Potomac and Anacostia Rivers;

- The development of fisheries management and aquatic education programs;

- The construction of facilities to reduce discharges of toxic chlorine at the region's largest waste water treatment plant at Blue Plains;

- The development of erosion control and storm water management programs;

- The coordination of Potomac River monitoring programs with the bay States and EPA; and

- The continuation of being an active partner in the Potomac River strategy.

In addition, Mr. Chairman and members of the committee, in 1984, we entered into the Anacostia watershed restoration strategy agreement with the State of Maryland to initiate work on the control of pollutants and sediment loadings to the river. We also have instituted a phosphate detergent ban and established an industrial pretreatment program.

But even with the progress that was made, it was clear that the 1983 agreement needed to be revised to include more specific objectives for our continuing efforts to restore and protect the bay. Therefore, I was pleased to sign the Chesapeake Bay Agreement of 1987.

I would like to echo Governor Schaefer's praise of Gerry Baliles, because he is the one who kept us together in the room and said that we must be more specific, that we have to make the tough decisions, and we all agreed to do that. I saw Governor Schaefer

when he came to the meeting, and Governor Schaefer is skeptical of these kinds of meetings. He doesn't like to travel around to meetings, because he doesn't get much out of them, but from this one, he came out beaming, because Governor Baliles had convinced him and all of us that we were serious about this matter.

So, in response to the new agreement, the District of Columbia has worked with the other signatories to develop the many required implementation strategies which include the basin-wide nutrient reduction strategy, the basin-wide conventional pollutant reduction strategy, and the bay-wide communication plan. These documents will establish the framework for the District's bay restoration activities over the next several years.

The District also assisted in the funding of the Chesapeake Bay access guide in cooperation with the Bay States and the Alliance for the Chesapeake Bay.

Mr. Chairman and members of the committee, we are not going to stop now. We intend to be vigilant, and we intend to be straightforward in our approach to helping out.

During 1988, the D.C. Government has been involved in the following projects and programs:

Promulgating storm water management regulations requiring the use of best management practices for all new development and redevelopment to control pollution from urban runoff;

Renewing the Anacostia watershed restoration strategy agreement with the State of Maryland and the affected local jurisdictions of Prince George's and Montgomery Counties;

Expanding our aquatic education program by beginning the construction of an aquatic education center and boat ramp in Anacostia Park in cooperation with the National Park Service and the U.S. Fish and Wildlife Service;

Implementing a sport fishing license program to provide a revenue source for the development of fisheries management programs and to further educate the public in the management of our fisheries resources;

Beginning construction of erosion control measures along Watts Branch, a major tributary of the Anacostia River, in cooperation with the Soil Conservation Service of the U.S. Department of Agriculture; and

Completing construction of a swirl concentrator near Robert F. Kennedy Stadium to reduce pollutant and sediment loadings in the Anacostia River as part of phase I of the combined sewer overflow abatement project.

Mr. Chairman, we are proud to be a part of this agreement. Also, Mr. Chairman and members of the committee, I would like to commend Lee Thomas, the EPA Administrator. He has been one of the finest administrators we have ever had in terms of working with us on the Potomac, the Anacostia, and the Chesapeake Bay. He has not had enough money to do all the things I am sure he wants to do, but he certainly has been there.

So, in conclusion, we in Washington are committed to achieving all the goals and objectives of the Chesapeake Bay Agreement of 1987. With the continuing legislative and fiscal support of the Congress, we will be able to build upon the foundation on which restoration efforts have begun. As stewards of the Potomac and Anacos-

tia Rivers, we are committed to the restoration of the bay, the preservation of our natural resources, and the development of a public consciousness and constituency for the environment.

Again, Mr. Chairman, thank you for your leadership. Thank you for the support of the District in its quest for home rule, thank you for being our friend, and I thank the members of the committee.

Senator MITCHELL. Thank you very much, Mr. Mayor, for your fine statement.

We are now pleased to welcome Delegate W. Tayloe Murphy, Jr. who is Chairman of the Chesapeake Bay Commission.

Senator WARNER. Mr. Chairman, I would also like to commend the Mayor for his statement. He has a real struggle around here, and he keeps his head above water, way above it.

Mr. BARRY. Thank you, Senator.

Senator MITCHELL. Mr. Murphy, good morning and welcome.

STATEMENT OF W. TAYLOE MURPHY, JR., CHAIRMAN, CHESAPEAKE BAY COMMISSION

Mr. MURPHY. Thank you, Mr. Chairman and members of the subcommittee.

At the outset, I would like to express my gratitude to Senator Tribble for his kind remarks.

My name is Tayloe Murphy, and I am a Member of the Virginia House of Delegates. I am a native of and I represent the Northern Neck, the historic peninsula between the Potomac and Rappahannock Rivers. I am currently serving as Chairman of the Chesapeake Bay Commission, and I appreciate this opportunity to appear before you with the other signatories to the Chesapeake Bay Agreement of 1987.

The Chesapeake Bay Commission is a tri-state legislative advisory commission created to assist the legislatures of Maryland, Virginia, and Pennsylvania in addressing bay issues of mutual concern. Each State is represented by seven members, five of whom are legislators. One is a designee of the Governor, and the other is a private citizen.

The commissioners have been intimately involved in the development of the State-level programs that form a large part of the basic framework for the Chesapeake Bay restoration and protection effort. We have taken the lead in adopting both legislative and budgetary measures to support these programs.

Members of the commission have successfully introduced legislation in Virginia and Maryland to limit the use of anti-fouling paints containing TBT and to prohibit the use of phosphate detergents. We have sponsored amendments to strengthen the erosion and sediment control laws in each of our States, and we have promoted the development of nutrient control strategies for the entire watershed.

The commission has supported successfully the Critical Areas Act in Maryland and the Chesapeake Bay Preservation Act in Virginia. These statutes will help to ensure the wise development of the shorelands and other sensitive areas of our States.

To date, our member States have appropriated and committed well over \$300 million in State funds for all of these efforts. Al-

though we are proud of the steps we have taken and look forward to continuing our leadership role at the State level, we recognize the on-going need for a strong Federal presence in this effort.

The signing of the 1987 agreement signaled the high water mark in the level of inter-jurisdictional and inter-disciplinary cooperation. All of us, the States, the District of Columbia, and the Federal Government now have specific commitments and defined time tables for meeting them.

As the only signatory that transcends State boundaries, the Chesapeake Bay Commission is dedicated to ensuring the effective implementation of the agreement throughout the watershed. Last September, the commission developed and presented to our representatives here in Washington a proposed Congressional agenda for the Chesapeake Bay. It stressed the continuing need for a strong Federal presence in the restoration and protection effort.

This morning, I am submitting a copy of our report. Most of the recommendations which the commission offered a year ago remain valid and appropriate today.

The report addresses a full array of issues, ranging from fisheries management and nutrient controls to toxic substances and land use trends. We have suggested an appropriate long-term Congressional agenda for the Chesapeake Bay, and I would like to take the remainder of my time to highlight for you some of the recommendations included in the report which we consider to be particularly significant both in terms of their beneficial effect and in terms of their urgency.

First, we commend the Congress for its recognition of the Chesapeake Bay program in the reauthorization of the Clean Water Act. The Water Quality Act of 1987 addresses for the first time the issue of non-point source pollution as a fundamental element in our national policy for water pollution control. The non-point source provisions of the new act are clearly intended to assist the States in developing and implementing a highly integrated, unified, and holistic approach to the restoration and protection of water quality.

This far-sighted program offers the States an opportunity to augment their agricultural cost share programs and other non-point source control efforts by incorporating these programs into a more comprehensive management strategy for the reduction and control of non-point source pollution of both ground water and surface water resources. This program could be particularly significant, because one-third of the phosphorous and two-thirds of the nitrogen entering the Bay and its tributaries emanates from non-point sources.

To date, however, no funds have been appropriated for the implementation of this vital component of the program. Accordingly, the commission recommends that the Congress, as a demonstration of the strength of its commitment to the reduction of non-point source pollution, appropriate the full \$100 million authorized for this program and for the other provisions of the Water Quality Act of 1987.

We also applaud the strong conservation provisions which were included in the 1985 farm bill. They represent the most significant changes in national soil conservation policy in the past 50 years.

The full implementation of these new provisions, however, will create a substantial new work load for the Soil Conservation Service, the ASCS, and local conservation districts in an era of steadily declining Federal support for conservation activities in general. We believe these new initiatives must be utilized to supplement, not to supplant, existing soil conservation and pollution control programs.

The Chesapeake Bay Commission recommends that adequate funding be provided for the soil and water conservation programs of SCS and ASCS, including both base program activities and those new activities related specifically to the implementation of the conservation provisions of the Food Security Act of 1985.

The commission is concerned about the extremely low participation of bay area farmers in the conservation reserve program which is designed to remove highly erodible lands from production for a period of at least ten years. This program is potentially one of the most important land management tools available to assist the States in their efforts to reduce sediment and nutrient loads to the Bay since CRP eligible lands account for fully 75 percent of the annual erosion within the watershed.

Farmers in the bay region, however, have enrolled their lands in this program at a rate far below the national average. We have begun to investigate the reasons for this low participation rate, and they appear to be primarily, if not entirely, economic in origin.

Although the Senators from the Bay States have raised these concerns in a letter to the Secretary of Agriculture, we feel that additional actions are warranted. We have suggested that both the States and the Federal Government pursue all possible administrative and legislative strategies to enhance regional participation in the conservation reserve program.

A number of specific policy alternatives which we feel should be considered are described in the commission's report. Both Maryland and Virginia have adopted incentive programs which are designed to enhance regional participation in this important program.

The responsible management of the living resources of the Bay has been a primary concern of the Chesapeake Bay Commission since its inception. The 1987 agreement has designated the productivity of the bay's living resources as the single most important criterion against which the success of our restoration efforts must be measured.

The agreement obligates the States to develop bay-wide fishery management plans for all major species. In order to develop such plans in a reasonable and biologically sound manner, a thorough knowledge of the condition of major fisheries stocks is essential.

The Chesapeake Bay Stock Assessment Committee within the National Oceanic and Atmospheric Administration has initiated the first comprehensive attempt to assess the status of important fishery stocks on a bay-wide basis. This effort has been carried out under an appropriation which has been made annually since 1985, but there is currently no legislative mandate for long-term authorization for NOAA to continue this project.

The commission favors legislation which would provide a clear charge to NOAA to conduct, cooperatively with the States, bay-wide stock assessments of commercially and recreationally impor-

tant species and which would include a three to five-year authorization for this effort.

Our commission is deeply concerned about the diseases which have devastated the oyster resources in Maryland and Virginia over the past two years. The Bay States should request and receive additional Federal disaster assistance to address the near-term problems related to these diseases.

It is also time that a comprehensive and concerted research program be mounted to discover the means to control MSX and Perkinsus and other serious shellfish diseases. Such a program should be a cooperative Federal-State effort, employing the best resources and research facilities at our disposal.

Representative Dyson of Maryland has introduced legislation to address this need, and the commission supports his effort. It is vital that this research be initiated as expeditiously as possible.

The Chesapeake Bay Agreement also commits the signatories to achieving by the year 2000 a 40 percent reduction in total nutrient loads entering the Bay annually. Clearly, such a goal will require major new efforts to reduce both point and non-point sources of nitrogen and phosphorous.

In the area of point sources, primarily sewage treatment plants, this will require a major shift in policy to include nitrogen load reductions at a number of sites throughout the region. In order to achieve our goals, advanced waste treatment, including nitrogen removal, is likely to be required on a large scale at plants in the bay watershed.

Current EPA policy, mandated by Congress, severely restricts the use of Federal funding for nitrogen removal technology. We believe that the time has come for Congress to reverse this policy.

Nutrient problems will become apparent in other areas of the country as increasing numbers of East Coast estuaries are more closely scrutinized. The Chesapeake Bay can serve as a proving ground for implementing and reviewing the effectiveness of various nitrogen removal technologies. The Chesapeake Bay program, with its existing inter-jurisdictional network and its on-going research projects, can be a model for estuarine programs on a nationwide basis.

The Chesapeake Bay Commission recommends that the Federal Government use this unique opportunity to conduct a large-scale demonstration program for the removal of nutrients from waste water using the entire bay as a living laboratory. Currently, EPA is participating in only two small biological nutrient removal demonstration projects. Both of these involve the retrofitting of existing waste water treatment facilities.

We believe that this effort ought to be expanded to include a variety of alternative technologies at large as well as at small treatment plants.

The 1987 agreement calls for a reevaluation of our nutrient reduction strategy in 1991. This reevaluation will rely heavily on the capabilities of the three dimensional model being developed cooperatively by EPA and the Corps of Engineers.

We strongly urge the Congress to ensure that the development of this predictive model is completed in a timely fashion.

I have mentioned only a few of the issues which the Chesapeake Bay Commission has addressed in its report. We have also called for a strengthening of existing programs and statutes that deal with toxic substances and for a closer examination of the interactions between air and water quality. Inter-jurisdictional and inter-agency relationships and responsibilities with respect to tidal and non-tidal wetlands protection must also be reviewed.

We hope that Congress will periodically hold hearings such as this one to ensure that all of the appropriate programs and policies are being implemented and coordinated at all levels and that we are making adequate progress in our collective endeavors. The Federal, State, and local partnership in the Chesapeake Bay effort has thus far been a good and productive one. The Chesapeake Bay Commission is committed to the continued support of that partnership, and we trust that Congress is also.

We look forward to working with you in the future in the pursuit of our mutual goal, a cleaner, healthier, and more productive Chesapeake Bay, for the benefit of all of our citizens. I offer to you the full cooperation and assistance of our members and our staff in forging an even stronger alliance for the Chesapeake Bay restoration and protection program so that it may be elevated to the national status which it truly deserves.

In closing, I think I can say that we are justifiably proud of the progress we have made in a relatively short period of time, but we cannot delude ourselves by thinking that our tasks have been completed or that our goals have been met. Much remains to be done.

We know that the population of the watershed will increase by 20 percent over the next 30 years. The majority of that growth will take place in the Maryland and Virginia portions of the watershed. There will be increased pressure on our land and water resources as a result of that growth. Without sound management strategies and bold and innovative waste reduction programs, the gains which we have achieved can easily be lost by the additional pressures that more people will place on the system.

We know that our task is not an easy one, and we do not expect overnight success. I do believe, however, that we are on the right path and that we must remain committed to this program over the long term. Clearly, it will require our best efforts and all of our energy, but we continue to be heartened by the fact that a concerned, informed, and involved public demands continued cooperation, improved management, and, ultimately, success in reversing the downward trends in the resources of the Chesapeake Bay.

No jurisdiction which is involved and no administrator or legislator, either State or Federal, wants to be seen as failing to meet the expectations of a concerned constituency.

Thank you very much.

Senator MITCHELL. Thank you very much, Mr. Murphy.

Senator WARNER. Mr. Chairman, if I could just observe for a moment, this distinguished individual, I think has had a longer identification with issues relating to the Chesapeake Bay than any other elected or appointed official in the Commonwealth of Virginia.

You have worked under three Governors, have you not, Delegate Murphy?

Mr. MURPHY. Two, Senator Warner.

Senator WARNER. Two. I thought you stretched back to Governor Dalton. And your family for how many generations have had an association with the bay and, in fact, derived much of the family income from the bay?

Mr. MURPHY. Well, my first ancestors arrived in the Northern Neck about 1650.

Senator WARNER. So, you speak with some authority and credentials in this area, and we are delighted to have you.

Mr. MURPHY. Thank you, Senator.

Senator WARNER. Mr. Chairman, are we permitted to ask one question, or what is the Chair's desire?

Senator MITCHELL. The questions will proceed now. I planned to do that in the order that the Senators appeared as I said in the opening statement.

Senator WARNER. Yes, of course. Fine.

Senator MITCHELL. We will limit the questions to five minutes per round. I will begin with Senator Sarbanes.

Senator SARBANES. Mr. Chairman, I really do not have a question to put. I want to underscore, though, what has been achieved here just in the very fact that we have brought to the one witness table the leaders from the various jurisdictions. I know Governor Casey had hoped to be present and has submitted a statement to the committee.

However, what has finally been put into place after years of trying—it wasn't very long ago that it wouldn't have been possible to put this together. It just wasn't there. In fact, the jurisdictions were fighting and scrapping with one another instead of cooperating with one another.

Delegate Murphy has played an instrumental role in developing a strong commitment, at the legislative level, in these jurisdictions which is extremely important. These Governors provide the leadership, but they need the legislature there providing the support on a range of programs and a commitment of resources.

So, the critical thing is we put this decision making structure into place, and I think the Federal Government and the EPA has been an important catalyst of that. That is why the EPA's commitment to this program and the commitment on the part of the other Federal agencies to be supportive of the EPA's role is extremely important.

This has finally been put together. It is now interrelated. It is working. There is obviously a shared trust and confidence and commitment among the jurisdictions, and we are very grateful to you for holding these hearings so that the Federal involvement and concern and oversight remain very strong and very vigorous.

I thank you very much for these hearings.

Senator MITCHELL. Thank you, Senator Sarbanes.

Senator Warner?

Senator WARNER. Thank you, Mr. Chairman.

I would submit this question to both the chief executives of Maryland and the District of Columbia, and I apologize to Governor Baliles. I was called out to break a deadlock in another committee's vote.

Gentlemen, have you been satisfied by the technical information provided by Federal agencies such as the Corps of Engineers and NOAA? I understand it is this information upon which you formulate the policies of your respective jurisdictions.

Governor SCHAEFER. Speaking for myself, yes, I have. I think we receive excellent cooperation. We have gotten the information we have needed.

Again, the only thing that I am concerned about is the coordination of all the information that we receive. You get so much and you get so many things coming that I just worry, from my own personal standpoint, whether there is the proper coordination of all the information.

I would like to just say about EPA that we couldn't be treated better by EPA. I cite that in the nitrogen matter that Delegate Murphy talked about. We are very interested in that. We have money ready to use in the nitrogen cleanup but just can't break it loose.

The answer to your question, sir, is yes.

Senator WARNER. Do you feel that some progress is being made? I am talking about tangible progress.

You very dramatically, in your excellent presentation, talked about the oyster catch. I happen to be a consumer of oysters. That is visible to the people who are following these hearings, as well as the come back of the rockfish.

Can we talk about a few tangibles? Do you see some progress?

Governor SCHAEFER. I definitely see progress. I am not as happy with what is going on with the oysters.

What we are doing in Maryland is we are moving shells from one place, putting them in good water, putting the spat on top, and three years later, the oystermen come and pick them up. But the disease is still spreading.

One of the things that I like at the University of Maryland is they are trying new experiments, new endeavors on MSX. I am not quite as optimistic on that.

On the rockfish, I see great progress. I was all ready to lift the ban, and then our people said it wasn't a good spawn or then the rockfish have moved. When you talk to the watermen, they have total disagreement.

Senator WARNER. Where did they move? Over to Virginia?

Governor SCHAEFER. We don't know. Where do they move? That is a problem. We take samples at the exact same place each time.

Now, according to all the experts, that is the way to do it. I would like them to take some new spots, but I am a non-professional, so I just talk from practical ideas, but I am slowing getting that through.

There are plenty of rockfish in the bay right now. For instance, one of my problems is you can eat rockfish in Virginia during certain times of the year. Whenever I go on the Eastern Shore, I hear, why can't we do this? My answer to that is I think we must keep that ban on if we are going to continue to move.

It is the same way with ducks and geese. We put a one goose limit for the first 16 days. It is strictly a conservation measure.

I see progress. I see people, for instance, the charter boat people. When they go out, instead of catching 100 bluefish, they said to me

one day, you have caught enough, Governor. That is enough. We had gotten 20, and that was plenty. And he was right.

I see tangible things. I think people are becoming more conscious of the cleanup of the bay, and there are simple things each individual can do, not all this technical stuff, but what you can actually do to help clean up the bay.

I am encouraged, but I am also frustrated in the term, because the progress that we are making is slow and steady.

Marion talked about the work that they did over there. That was very tangible, and you can see the progress that they made in that one river. Now, he is talking about the Anacostia. I think that can be done, too.

I am encouraged with the progress.

Senator WARNER. I thank you, Governor. You are a very effective communicator, and I am quite impressed.

Mr. Mayor?

Mr. BARRY. Senator Warner, we have had excellent technical information from all of the appropriate Federal agencies. The answer is yes.

Also, Mr. Chairman, I am going to have to leave fairly shortly. I have three functions: as Governor, county executive, and as Mayor. I have not started my other functions yet, so I must go down to city hall.

Senator MITCHELL. We are glad you are here.

Senator WARNER. You look great. Where did you go on that vacation? I might try that.

Mr. BARRY. Ask the Washington Post. They spent about \$50,000 trying to find out.

And I am going to go again, Senator Warner, but this time in Virginia.

Senator WARNER. I have one quick question for Mr. Murphy. What is the role of the commission in helping States implement policies to comply with the bay agreement?

Mr. MURPHY. The bay agreement contains a number of commitments, each of which has been referred to a commitment team of State and Federal representatives at the administrative level. The commission is in the process of reviewing each one of those commitment reports. We have already reviewed the first 11 reports, and we are trying to coordinate our State efforts so we will achieve a degree of uniformity at the State level in implementing the recommendations from those commitments.

We still have a number of reports and commitment strategies that will be developed between now and December of this year. That includes the toxics report and also the non-tidal wetlands report, both under the living resources section and under the population growth and development section.

Probably the non-tidal wetlands issue is the one on which the commission is spending more time than any other issue, because it is a difficult one. We feel that there needs to be uniformity at the State level, especially in the definition of what a non-tidal wetland is. We feel that there needs to be some uniformity with regard to regulatory provisions as opposed to best management practices.

In those areas where the non-tidal wetland is proposed to be converted and no longer function as a wetland, the permitting process

is more appropriate. We need to have a uniformity of standards by which those conversions would be allowed, if at all.

In the area where the non-tidal wetlands are being utilized for some purpose that may have damaging effects, we need to have uniformity in best management practices.

So, the commission is looking at the whole range of issues that are called for by the bay agreement, and we are trying to coordinate the efforts so that each State will perform its obligations under the agreement in a manner that will be coordinated and uniform throughout the bay watershed.

Senator WARNER. Thank you very much.

Thank you, Mr. Chairman.

Senator MITCHELL. Thank you.

A 30-minute vote has just begun, so we will follow this procedure. Senator Mikulski will now be recognized for her round of questioning following which she will leave to go vote. I will continue the hearing, excuse this panel, take the witness, and, then, upon Senator Mikulski's return, she will assume the chairmanship of the hearing and I will go over to vote and then come back.

Senator Mikulski?

Senator MIKULSKI. Thank you very much, Mr. Chairman.

I just have a comment to our Governor and then a question.

First, Governor, I can't tell you how much I liked your "Ten Ways You Can Clean Up the Chesapeake Bay," pamphlet because I think it does involve the people, and it means that they can do things that are specific, immediate, and causes them to realize that ordinary folks can help in the cleanup.

I have a little summer home in a creek off the Severn, and I remember sitting on the beach one day reading one of my many briefing books. This guy weighing about 320 pounds pulls up with his outboard motor, pulls right up on my beach, gets out, strolls over, picks open his cooler, pulls out a can of beer, pops open the top, throws it into the water, puts his hands on his hips, and says, what are you blankety-blank politicians doing to cleanup the bay? All this time, his outboard motor was running, and my beach looked like an oil slick while we continued this conversation.

Well, Governor, I wanted to do to him what the pesticides are doing to our vegetation; I wanted to clean him out right away.

I think that goes to the heart of the problem. Everybody thinks cleaning up the bay is somebody else's problem and also that it is the problem of the politicians and the scientists. So, I think you are to be congratulated.

Governor, I know you have taken the leadership on many matters, but I know you have been very aggressive on new regulations at the State level for cleaning up medical waste. Maybe you could tell us in three or four sentences what you have done on that. I think it would be helpful for the committee to be aware of it, because at the Federal level, we are quite fragmented.

Governor SCHAEFER. In three or four sentences very quickly, it became a problem. Everybody is scared to death that they are going to get AIDS or hepatitis or something from the needles.

We passed an executive order we hope will be approved by the legislature that said there will be strict enforcement, follow through, and money set aside to actually do the research, to do the

follow-up, and to go into court and actually take some heavy action on this. That, very briefly, is what we are doing.

I am very concerned over it. We have a hazardous waste disposal spot in the State of Maryland down at Hawkins Point. It isn't being used right now, and that is a concern. The hospitals and medical institutions find it, I guess, easier just to get rid of it anywhere.

You read about that man who stored some hazardous and medical waste in his garage. So, that is what we are doing.

Senator MIKULSKI. We thank you for taking the leadership in the absence of a Federal policy.

I am going to go vote for our new Secretary of Education, and I will be back.

Senator MITCHELL. The success of the bay program is largely attributable to the partnership between all levels of government. I want to ask you to select the single most important step the Federal Government can now take to continue and improve the program. I am going to suggest three and ask you to select one of them.

Is there a need to increase grant assistance to the States? Does the Federal Government need to do a better job with cleanup of Federal facilities? Is there a need for the EPA to take more of a leadership role in research and monitoring of the bay?

Greater grant assistance, greater monitoring and research by the EPA, or a better effort to clean up Federal facilities. If you had to select one of those as an important action by the Federal Government, which would you select? Governor?

Governor SCHAEFER. I would take the cleanup.

Senator MITCHELL. Of the Federal facilities?

Governor SCHAEFER. I would. The reason for that is personal. I have a major base that we could turn into an economic benefit if we could get the Federal Government to clean up.

The other two are equally important. That is a great question.

Senator MITCHELL. All right. Mayor Barry?

Mr. BARRY. I think the cleanup of Federal facilities.

Senator MITCHELL. Mr. Murphy?

Mr. MURPHY. That is a very difficult question, Mr. Chairman.

Senator MITCHELL. Well, the Governor started out by saying these are all tough decisions, Mr. Murphy.

Mr. MURPHY. That is right, and each one of them is important in its own right.

I do feel, however, that there is a substantial amount of work to be done at State facilities as well, and I would say grants to the States for continued efforts to advance waste treatment plants and other facilities that need those funds to be able to improve the quality of the effluent going into the streams would be the most important of those three.

Senator MITCHELL. The other very sensitive issue in terms of relations with the public and protecting the bay and every sensitive body of water is, of course, how to control land use around the body of water.

Mr. Murphy, you have been particularly involved in this for a long time, and I think you could address this in what I hope will be a comprehensive and thoughtful way. It will be very helpful to us, because this problem is now being replicated in other parts of the

country, and we must learn as a society from the difficult experiences of the Chesapeake Bay how best to handle comparable problems in other parts of the country in the future.

So, I want to conclude by thanking you gentlemen very much for your testimony and for your patience. I know it has been a long morning. Everybody had a lot to say, but it is an important issue that needs addressing. We look forward to working with you again in the future.

Thank you very much.

Mr. MURPHY. Thank you, Mr. Chairman.

Senator MITCHELL. The next witness will be Lee Thomas, the Administrator of the Environmental Protection Agency.

Mr. Thomas, you have been a frequent witness before this committee. While we have often disagreed on specific issues, we have always found your testimony to be intelligent, thoughtful, forceful, and extremely helpful to the committee. As always, we welcome you as a friend and look forward to hearing from you.

**STATEMENT OF HON. LEE THOMAS, ADMINISTRATOR,
ENVIRONMENTAL PROTECTION AGENCY**

Mr. THOMAS. Thank you very much, Mr. Chairman.

I appreciate the opportunity to be with you today. I have with me at the table Jim Sief, our Regional Administrator from Philadelphia who is directly involved in many of the implementation activities related to the Chesapeake Bay.

The questions the Committee is interested in make this hearing particularly important, not only because of its relevance as far as the bay is concerned and what we are doing as a Federal agency, or as a Federal Government, to help make the tough decisions Governor Schaefer talked about, but also because of the lessons we need to learn not only about the bay, but about our coasts generally from what we have found in the bay.

As an individual who is getting to a point in his career where he begins to look back to past experiences, I can see that I have learned a number of valuable lessons during the nearly four years I have been involved with the Chesapeake Bay. One, I have learned a real lesson about coastal pollution. I have found that the problems we have been addressing in the bay for well over ten years now are in fact problems that also exist up and down our East Coast, West Coast, and the Gulf of Mexico.

We developed an overall near-coastal strategy in our agency about three years ago to deal with these common issues. As you know, Congress directed us in the Clean Water Act amendments to get more aggressive in dealing with near-coastal problems, and we are doing that.

As I indicated, we have found that the same kind of problems we are dealing with in the Chesapeake Bay also confront us in Narragansett Bay, in Puget Sound, in Galveston Bay, San Francisco Bay, and Sarasota Bay. This country's estuaries, the most sensitive part of the entire marine ecology system are, indeed, in trouble.

So, on the basis of past experience and the outlook ahead, my message to whomever may step into my position in the future is

that the issue of near-coastal pollution has to be one of our highest priorities as far as environmental protection is concerned.

In addition to what we have found out about the problems of estuaries, we also have learned something about solutions. These solutions as Governor Schaefer said, require tough decisions. We have seen that in the Chesapeake Bay; we are seeing it in other estuaries as well.

The tough decisions required extend to a wide range of issues: How are we going to deal with point source discharges? How are we going to change overall cultural approaches now ingrained in our agricultural system? How are we going to deal with growth and development? This latter issue is particularly critical where growth threatens to overwhelm coastal areas. Projections that 75 percent of the United States population will live within 50 miles of one or another coast lines in the 1990's are frightening when we see the impact that that growth is having in those sensitive ecological areas.

Finally, I must say I have learned real lessons about leadership as I have participated in the Chesapeake Bay effort. These lessons go back to working with people like Governor Hughes and the leadership he displayed, along with the other Governors of that time, and the Governors today. As a participant in the meeting, I saw what Governor Baliles did in Norfolk in August of last year, when he kept us at the table until we reached specific agreement and got into the detail of what needed to be done to advance the Bay Program.

As you saw today, Governor Schaefer demonstrated that he personally understands not only what the issues are, but what has to be done to restore the bay. Other people, including members of this committee, who have been involved in the Bay Program have demonstrated the leadership and the commitment that are absolutely essential if we are going to deal with these coastal problems.

The final lesson I have learned is that informed citizens can and will support, and support strongly the kinds of actions that are required, including legislation such as the critical areas commission approach in Maryland, the action the Virginia Legislature took in its last session to deal with growth along the bay, or the tough legislation Governor Baliles said is needed to protect wetlands, an essential part of the long-term solution. Citizens, indeed, not only will understand but will support these kinds of approaches as well as taking action themselves to protect the bay.

So, the Chesapeake Bay experience has been a real learning experience for me over the last three and a half years. With specific reference to the Chesapeake Bay Agreement I signed on behalf of the Federal Government last December, I agree with the Governors that we have moved forward.

The District of Columbia has demonstrated, as it has for some years, the kind of aggressive commitment that Mayor Barry talked about. All the States, along with the District and the Federal agencies as well, have developed specific plans for nutrient reduction and toxics control, devised an overall framework to protect living resources, and laid out a comprehensive research strategy. The coordinated research plan is critically important to understanding

what improvements are being made and also to identifying what needs to be done.

A coordinated approach for public education is planned and linked to that as Governor Schaefer noted, is enhanced public access to the bay itself. Finally, we are working to ensure implementation of a detailed Federal facilities plan and Federal agency work plans.

We have worked hard on developing the overall detailed plan for Federal agencies. It includes an expanded research effort on the part of NOAA with the kind of resources they can bring to bear, the work of the Corps of Engineers in developing the three-dimensional time-variable model of Bay water quality, the Soil Conservation Service's commitment of additional personnel to the bay and its efforts to ensure that plans are developed to reduce the impact of both erosion and nutrients programs of the Fish and Wildlife Service, and the support my own agency has provided, both with our expertise, and staff support out of the Chesapeake Bay liaison office.

Finally, as the Governors noted, there is the specific plan to control pollution from those Federal facilities on the bay, including installations of the Department of Defense which make up the largest Federal presence in the watershed.

The Federal agencies are committed to moving forward with individual plans for each facility. Whether it is the cleanup of sites or restrictions to deal with point and nonpoint sources of pollution, we want to ensure that the varied actions we have talked about at the State and local level also are carried out at Federal facilities.

So, in conclusion, Mr. Chairman and members of the committee, we fully recognize that the Chesapeake Bay is indeed a vital resource for this country. It is a resource that the Federal Government is committed to protect.

This protection effort has taught me a lot. And it has, I think, given us a sense of direction as to how we should deal with near-coastal degradation environmental problems as a whole.

Senator MITCHELL. Could I interrupt? I am sorry. I have to go vote now, because we only have a few minutes left. I wanted to get one question in, and then maybe you could conclude.

Mr. THOMAS. I was at the end.

Senator MITCHELL. Were you? All right, I apologize. And I really only have two questions. I am going to ask them and then ask you to respond in writing.

I truly commend you for the cooperation and leadership you have shown on the Chesapeake Bay, but the fact is that we know that the problems of the bay are caused by other national contributing pollution efforts. I want to ask you about two of them.

Nonpoint pollution is a major source of problems in the bay. We authorized \$100 million for the non-point pollution control program as part of the Clean Water Act last year, but the EPA proposed budget for next year includes no funding to deal with non-point pollution.

As you know, the Environmental Defense Fund recently issued a report suggesting that acid rain is a significant contributor to nutrient pollution in the Chesapeake Bay, and previous studies have suggested a link between acid rain and the decline of striped bass

and other fish species. Yet, the Administration continues to oppose controls on acid rain.

My question is—and, again, I ask you to submit the answer in writing—can we expect some forthcoming action from the EPA on non-point source pollution and acid rain if we are serious about dealing with the Chesapeake Bay, since these are factors that contribute to the problems of the Chesapeake Bay?

Again, I apologize for the inconvenience. I do have to make this vote. I will be back. You may still be on, and we can engage in a colloquy. If not, I would appreciate your submitting an answer in writing.

Mr. THOMAS. We will be pleased to do that, sir.

Senator MITCHELL. Thank you very much.

[A response to Senator Mitchell's question follows:]

Question. Can we expect some forthcoming action from the EPA on nonpoint source pollution and acid rain if we are serious about dealing with the Chesapeake Bay, since these are factors that contribute to the problems of the Chesapeake Bay?

Answer. The Chesapeake Bay Program has a active nonpoint source control component which is being called upon to contribute significantly to the goal of reducing by 40 percent the nitrogen and phosphorus emissions to the bay. We are aware that atmospheric sources of phosphorus, and particularly nitrogen, are significant, and have accurately included them in our calculations. We will be examining the prospect of controlling atmospheric sources and of nitrogen and controlling them as a part of our implementation programs of the future. At this time, we are engaged in preliminary studies as a part of our estuarine research activities at our laboratory in Narragansett, Rhode Island.

Senator MIKULSKI. Mr. Thomas, why don't you go ahead and finish your statement.

Mr. THOMAS. Senator, I was just ending my statement. In conclusion, I would just emphasize the fact that I think we have all learned a lot about the problems of the Bay, and I think we have also learned a lot about the solutions. I am encouraged by the kind of effort demonstrated over the last year, particularly in developing the detailed strategies that everybody has to follow, State agencies, Federal agencies, and individual citizens, too. I think we all recognize now the long-term commitment that is required if we are going to restore the Bay. I believe we will succeed because that kind of commitment is being demonstrated, as you can perceive from the statements of the leaders of the Bay basin jurisdictions.

Senator MIKULSKI. Thank you very much, Mr. Thomas.

Again, I would like to thank you for the leadership that you have shown on this subject, and I know you have taken a personal interest in it. The administrators that you have appointed, Mr. Sief, your regional administrator, the staff that you have put in there are first class.

One of the questions that I had was this whole issue of are we making progress, or are we just running in place to stay up with growth, the growth on the bay that implies fishing and sewage and so many other kinds of things? Could you comment on that in layman's terms?

Mr. THOMAS. That is a good question, Senator, and it is one we ask frequently. I ask it of my staff, which can provide a series of examples where we are making progress, and I would agree with them. We are making progress in the areas that we have been talk-

ing about today, including clean up plans and other actions by the jurisdictions, by many people.

It is difficult to demonstrate at this point, however, specific improvements in Bay water quality or Bay resources.

I would have to say that we have stabilized degradation. I think we will see improvements as we implement clean up strategies, but I don't think we can say today that we have begun to see the improvement. We can say we have stabilized the situation in terms of loadings going into the Bay.

Senator MIKULSKI. So, you think we have bottomed out, essentially, from the standpoint that it is not going to get worse.

Mr. THOMAS. That is the sense I have from talking about the Bay Programs with my staff and looking through the reports that are generated as to where we are today.

Senator MIKULSKI. One of the other areas that I raised with Governor Schaefer is a long-range issue. It is the issue of coastal programs. I know that both Senator Mitchell and, I think, all of the bay Senators are concerned about coastal pollution problems.

I am interested in your view as to whether we need additional legislation on toxic containments, and I am also particularly interested in your views and direction on medical waste. So, one, coastal pollution generally, toxics, and then medical wastes.

Mr. THOMAS. Senator, coastal pollution, particularly near-coastal pollution in our estuaries, is one of the major environmental degradation problems we face in this country. I think it has to receive our highest priority, and I think it has to receive the same kind of long-term commitment we talk about in relating to the Chesapeake Bay.

The degradation exists not just on the East Coast but on the West Coast and in the Gulf of Mexico as well. The kind of solutions we talk about to deal with coastal pollution are the very kinds of solutions we talk about for the Chesapeake Bay.

We have to talk about nutrient reduction. We have to talk about toxics control. We have to talk about, in my opinion, hard decisions on growth and development in many of these coastal areas.

Population movement into these very attractive coastal areas forces hard decisions on growth such as Maryland made in adopting its critical areas approach. That is exactly what is required if we are going to deal with these problems.

Now, we can point to progress we have made. We can point to progress in upgrading sewage treatment plants, but we have another step that has to be taken. Combined Sewer Overflow is a major problem in many big cities and major efforts must be undertaken to deal with it.

We can point to progress in States developing non-point source control programs. We have worked with States to show what can be done through best management practices. That effort is going to have to be expanded, in my opinion.

I also believe we ought to look at the possibility of expanding the conservation reserve program beyond highly erodable acreage to other areas that have major impact as far as surface water.

Senator MIKULSKI. Are you talking about RCRA?

Mr. THOMAS. In this case, I am talking about the conservation reserve program under the Food Security Act, the farm bill. This pro-

gram removes highly erodable land from farming through subsidies from the government. I think the possibility exists of expanding that to encompass an environmental point of view. We should look at those lands that would have major impact on water quality in estuaries as possible candidates for the conservation reserve program.

Ultimately, I just have to come back to and emphasize the kind of commitment I think has to be made to control growth in those coastal areas. In that regard, I constantly find myself in conflict with development interests in regard to wetlands in coastal areas.

I appreciated the comments that Governor Baliles made about wetlands. Not just tidal wetlands, but non-tidal wetlands in watersheds and basins also must be protected if we are going to ensure that toxic materials and excess nutrients do not reach our estuary areas.

Senator MIKULSKI. I think that was an excellent set of comments in terms of some of the toxics and some of the nonpoint sources, but, as you know, one of the things that we also faced this summer was the fact that biomedical waste washed up on our beaches and our shores. I think all of America found that a repugnant oversight.

It is what I said earlier. It goes to our hearts that we found that. An OTA panel says there are several agencies that are involved, EPA, the Center for Disease Control, OSHA, and so on, but that, really, your agency has the authority, particularly under the Resource Recovery Act.

What thoughts do you have in terms of biomedical waste and could you tell us what the Administration is currently doing? Do you have an interagency task force?

We really don't want to do that. It had a tremendous effect on the psyche and the tourism. Everybody just thought that you could get all kinds of unmentionable diseases from walking down the beach.

Mr. THOMAS. Senator, first, let me agree with you wholeheartedly as far as that problem is concerned. It is an intolerable situation. The kind of problem we saw this past summer, and in a far more limited sense the summer before on some of our beaches, is not one that any of us will tolerate.

We have been working hard on the medical waste issue. I recently established an overall task group on this issue and designated my Deputy as its Chairman. We are working with other agencies, particularly the National Institutes of Health, the Centers for Disease Control, and agencies with medical facilities such as the Department of Defense and Veterans' Administration to try to ensure that we have both a coordinated approach at the Federal level and a more aggressive approach in Federal direction and Federal support for the States.

A number of programs are now under way. We are doing more in terms of guidance, both interagency and with the States.

Personally, I think we are going to have to go beyond guidance. We are looking at development of disposal requirements right now for hospital incinerators and whether those standards need to be upgraded, and at land disposal requirements for this broad category of medical waste.

We are also evaluating current State programs, particularly those that have tracking systems, to look at and determine whether a tracking system is feasible on a broader basis. We worked with New York and New Jersey to help put their programs in place a month ago. We are looking at whether such a system is needed nationally. Whether it is feasible, and how it could be done.

We are exploring any number of other possible actions through this task force to try to deal with this tragic and intolerable problem as far as our coasts are concerned.

The medical wastes are symptomatic of the larger problem we have with disposal of solid waste in this country. We are trying to deal with the overall problem, integrating what we are doing with medical wastes with what we are going to do on solid waste and hazardous waste generally.

Medical wastes also are a growing problem because of overwhelming growth in our coastal areas which I discussed earlier. The problem is also symptomatic of a substantial increase in the last several years of disposables. In other words, instead of reusable equipment, we have greater use of disposable devices now. This is a problem not just in terms of medical wastes, but for solid waste overall.

I believe that clearer and more distinct authority for us to deal with medical wastes would be extremely helpful to us in coping with the problem quickly. I have reviewed and endorsed the Senate-passed bill concerning a national tracking system and have offered suggestions as to how I think that bill could be improved. For instance, we should have clearer authority to impose penalties for illegal disposal on beaches.

I also have been working closely with the House committees that are in the process of concluding their markup on a broader authority to deal with medical waste. I think the issue of authority could be clarified effectively through legislation Congress is looking at now, and I hope that over the next several weeks Congress will take final action on some of that legislation.

Let's make it clear in the statute that not only are we going to deal with the problem, but state directly that EPA has the authority and a clear mandate to move forward.

Senator MIKULSKI. I think we are all looking for you to, one, have a very clear mandate and, second, the best scientific advice you can get, because some waste, although it looks dangerous, is not.

Mr. THOMAS. That is right. There is no question about that. We have worked closely with the Centers for Disease Control on that, and I think that point is a very important one. The risk element in terms of human health is in many cases very small, notwithstanding the fact that these wastes are totally repugnant. However, that does not diminish our commitment to deal with the problem, and it doesn't.

Senator MIKULSKI. To even support your comment on the need for an overall waste disposal policy, many of the generators of biomedical waste are not only high tech research centers like Johns Hopkins but, very often, the ordinary family home now. There is the wonderful shift to home health care where people can take care of themselves, and there are local diagnostic tests which

people can give in their homes for, say, diabetic monitoring. There is the ability for diabetics to give themselves insulin, often using disposable syringes.

My mother is a diabetic. She goes through, I think, three disposable syringes a day. I guess you might call Miss Chris a small waste generator, but then what do they do with that? It goes into their regular trash and then back out into the community.

So, we will look forward to working with you and the Administration on this.

Senator Sarbanes and Senator Warner have returned. Mr. Thomas and I have talked about coastal pollution. We have talked about biomedical waste management, and we talked about general improvements in the bay.

Senator Warner, did you have any questions?

Senator WARNER. Thank you, Madam Chairwoman.

Mr. Administrator, we appreciate your coming today.

Governor Schaefer recommended that priorities must be established within the bay's research programs. Can you comment on the direction provided by EPA to assist States in prioritizing the bay activities?

Mr. THOMAS. I agree with Governor Schaefer on that, and one of the commitments under our 1987 Agreement was to pull together a clearly defined research strategy covering both Federal and State agencies participation and private institutions. That strategy is being implemented right now.

I believe the strategy responds exactly to the concerns of Governor Schaefer. I think it lays out what we will be doing as Federal agencies to support private institutions, and more importantly, what the questions are that we are all working to answer.

Senator WARNER. What lessons have you learned from the bay program that can be applied to other estuaries?

Mr. THOMAS. I have learned a lot from the Bay program. I talked about that a little earlier. We are finding the same kind of problems as we have in the Bay up and down the East and West Coasts, in the Gulf States, and in other estuaries.

The solutions we see to Chesapeake Bay problems are very much the kind of solutions that are required elsewhere. The kind of leadership that has been demonstrated by the Governors, the Congress, and the public is exactly what is needed to come to grips with those problems in other areas.

The Chesapeake Bay is a little ahead of many of those other areas as far as trying to identify the problems and lay out a plan of action, but is very much the path we have to follow elsewhere. I would say that coastal pollution has to be one of our highest priorities in the years to come.

Senator WARNER. Thank you, Mr. Administrator. Again, I wish to compliment you on your effective leadership in this area.

Mr. THOMAS. Thank you, Senator.

Senator WARNER. I thank the Chair.

Senator MIKULSKI. Senator Sarbanes?

Senator SARBANES. Thank you, Madam Chairwoman.

First of all, I want to welcome Jim Sief to the hearing as well, Mr. Thomas. We have worked closely with him as your Regional

Administrator in Region III, and it has been a very positive and constructive relationship.

What is the status of the efforts on the new memorandum of understanding between EPA and the other Federal agencies with a role in the cleaning up of the bay?

Mr. THOMAS. We have made good progress, I think, with the other Federal agencies. We basically have good commitment from every Federal agency to move forward with us as we implement the Bay Agreement.

We have signed new memoranda of understanding both with the Department of Agriculture and the Fish and Wildlife Service. We are working closely with NOAA as that agency developed an expanded research program, not just for the Bay but for coastal areas generally. We are working closely with the Department of Defense as the services develop their specific facility restoration plans.

Now, the issue that Governor Schaefer mentioned, that at the Department of Defense facilities on the Bay is one the Department is working on specifically for each facility. I think someone noted the fact that the Navy had designated Admiral Pappas as the overall coordinator for Navy efforts on the Bay. That is an example of the kind of commitment the Department of Defense is now making to deal with these problems.

Senator SARBANES. As I understood Senator Warner earlier, the Department of the Army has not yet done that, though. Is that correct?

Mr. THOMAS. That is correct. We are working with the Department of the Army on that. The Department does have under way, though, their specific facility work as does the Defense Department overall. That involves looking at each facility and laying out a plan to deal with the problems the facility creates as far as Bay water quality is concerned.

Senator SARBANES. Is it your view that if they had a general officer designated to coordinate the entire bay approach that would be helpful?

Mr. THOMAS. I think it would be helpful.

Senator SARBANES. Well, we want to be helpful to you in that regard. One of the things I want to underscore and I said in my opening statement is that while limitations of time did not permit us to bring to this hearing each of the agencies that impact on the bay with whom you work and you are trying to develop these memoranda of understanding, we are very cognizant of their important role in this matter, and we intend to follow very closely their activities, because we are very anxious that they are fully cooperative in every way.

Have you thought of trying to develop a memorandum of understanding with the Coast Guard? I say that because they play an important role, for instance, in the cleaning up of oil spills. This has, of course, recently been in the news. And they have a role in regulating water borne transport.

I wonder whether the EPA ought to consider working out some formal arrangements with the Coast Guard as a way of bringing them more centrally into this whole bay effort.

Mr. THOMAS. We have an overall formal agreement with the Coast Guard relating to spills and spill response generally. As a

matter of fact, we jointly work on spills with EPA taking the lead on inland spills and the Coast Guard on coastal spills. So, we have a very longstanding and active relationship.

I am not familiar, though, with the specifics of how far we have gone as it relates to the Bay. I think that is a very good point as to whether specific activities related to the Bay might require an addendum to the existing formal arrangement we have with the Coast Guard.

Senator SARBANES. Well, I would appreciate it if you would take a look at that. I have a high regard for the abilities of the Coast Guard. It is much like the view I have of the Corps of Engineers. The real question is drawing them in so it is clear that they have assumed the responsibility. Once they assume a responsibility, they usually do a pretty good job of it. The question is whether they perceive that that is their responsibility.

Mr. THOMAS. That is a very good point. Let me follow through on that. They may already be a part of Bay-related activities. I am just not that familiar with it.

[The following information was subsequently supplied:]

Question. Are EPA activities in the Chesapeake Bay adequately coordinated with the Coast Guard, and should a MOU be written to define a more specific role for them?

Answer. EPA has an MOU with the Coast Guard that defines how the Coast Guard's cleanup and enforcement of chemical spills is coordinated.

We have had an opportunity to test this coordination on numbers of occasions, most recently during a spill on the Chesapeake Bay. We believe that our current procedures are sufficient, and are pleased with both the attitudes and the results. We do not believe that a revision to the MOU is necessary.

Senator SARBANES. In the HUD-Independent Agency appropriation bill which the President has already signed into law, there was another \$0.75 million for toxic research on the Chesapeake Bay. That is an item which the bay area Congressional delegation pressed very hard to obtain.

Has the EPA yet made any determination on how they will use those funds?

Mr. THOMAS. I think the funds can be used very effectively. Both EPA and the States are pleased to see those funds available. The toxics control strategy that has been referenced by others is in preparation now. By the first of the year, it should be completed, and it is our understanding, and our intent as we work with the States, that the strategy will be a guide for how that money would be used.

So, I think you will find that at both the Federal and State levels, those funds will be available to implement components of that strategy.

Senator SARBANES. If I were to give you your wish list and ask what two or three additional things could be done, either resources made available or a particular strategy moving in yet another direction that would strengthen this bay cleanup effort, what response would you give?

Mr. THOMAS. I would suggest looking at several things. One, as I mentioned to Senator Mikulski, is the conservation reserve program that was set up under the Food Security Act of 1985. It is a very large program as far as erodable lands are concerned.

As Congress takes a look at that next time around, I think the possibility, should be examined of expanding the criteria to incorporate lands that have direct impact on water quality, particularly in estuaries. We have worked within the law and expanded the regulations to include lands used as filter strips, but I think this is an area that warrants a good deal of attention.

I also think that strong oversight, as you have indicated, is critically important to Federal agency efforts, continuing to make it very clear to all the Federal agencies the importance of their participation. I think your point just a minute ago about where we are going as far as defense facilities are concerned is excellent, and demonstrates the need for a clear understanding of the kind of commitment that you expect.

I think the commitment is there, but there is always room for improvement in each of our agencies.

Looking at our budgets as you did this last year and seeing if there are opportunities where additional resources could be helpful in carrying out programs particularly important to the Bay is also important to pursue.

Senator SARBANES. Thank you very much. I will just close with this observation.

It has been my very strongly held view consistently throughout that the EPA is, in a sense, the magnet that holds all these differing elements together. That is not in any way to diminish the extraordinary achievements on the part of the States, but I do think we need EPA there in the center of this organizational structure.

It is very important that you continue to play that role in a very positive and yet sensitive way which I think you have been doing. In particular, since it is directly under our jurisdiction, I am concerned that the balance of the Federal establishment is cooperating fully in every respect.

There are an incredible number of Federal facilities on the bay which impact very directly through their activities on bay quality. There are a number of programs in various Federal departments and agencies—the Soil Conservation Service is a clear example. So, I think we are going to be successful in getting you some additional people to work on the bay effort specifically.

So, we need to continue to work very closely with you to ensure that all of those Federal resources are being marshaled in this effort.

Thank you very much.

Senator MIKULSKI. Thank you very much, Senator Sarbanes.

Senator MITCHELL, did you have any questions?

Senator MITCHELL. I have no further questions at this time.

Senator MIKULSKI. Mr. Thomas, again, on behalf of the committee, we want to thank you for your professional involvement as well as your personal interest in the bay and the fact that you have given us the quality of staff that you have like Mr. Sief who really work on sensible solutions to concrete problems.

Again, thank you very much.

Senator SARBANES. Madam Chairwoman, I would like to recognize someone, too. I see Al Morris and Charles Spooner also here with Administrator Thomas and Mr. Sief. They have been very much involved in the bay and have shown a lot of dedication and

commitment. I simply want to acknowledge their presence here today.

Mr. THOMAS. Thank you very much, Senator.

Senator MIKULSKI. Now, we would like to call panel III composed of Mr. Will Baker, President of the Chesapeake Bay Foundation; Mr. Richard Burton, Executive Director of the Virginia Water Control Board; and Robert Percival from the University of Maryland.

We would like to welcome this panel. Mr. Baker, as the President and Chief Executive Officer of the Chesapeake Bay Foundation, we would like you to start off and to hear your thoughts on the bay. I know you have a couple especially important things you want to say about oil spills.

STATEMENT OF WILLIAM C. BAKER, PRESIDENT, CHESAPEAKE BAY FOUNDATION

Mr. BAKER. Thank you, Senator Mikulski, Senator Mitchell, and Senator Sarbanes. It is a great honor for me to be here today, and I thank you.

It is also with a sense of *deja vu* that I appear. I have given testimony on Capitol Hill four times now in the last five or six years, and many of the recommendations that I will make this morning and that are contained in our written testimony have been made before.

Granted, our knowledge of the Chesapeake Bay continues to increase annually, yet we have known for some time what generally needs to be done to restore it, and these needs go far beyond what I feel is presently on the drawing board.

The summer of 1988 has taken a heavy toll on the environment of our entire planet, but I don't think the price of this pollution has been greater anywhere than on the Chesapeake Bay. From the medical waste we have heard about to bluefish and rockfish dying in numbers greater than ever before seen to the second largest oil spill in the bay's history, the summer of 1988 has not been pretty.

A brief excursion on the bay can tell quite a story. You don't have to be a scientist to look at the water and know that is severely stressed and severely polluted. Clearly, we have our work cut out for us.

Let me try now to just summarize our specific recommendations.

With regard to EPA, we think that the agency must play a far greater role in developing a comprehensive bay-wide restoration and management plan. The cooperation of the States goes a long way, but the bay is a regional body that stretches across State boundaries, and I think it demands a greater Federal involvement.

Two, EPA has been hypocritical in saying that nitrogen is a central pollutant of the Chesapeake Bay and yet prohibiting the States from spending Federal money on nitrogen removal at sewage treatment plants. That must change.

Three, EPA must require the States to incorporate nutrient effluent limits in permits not only for sewage treatment plants but for industrial dischargers as well.

Let me turn to toxics.

I think the States and the Federal Government must go beyond the requirements of the Clean Water Act if we are ever going to

protect a body of water like the Chesapeake Bay. Water quality standards for those toxics that pose the greatest problem and the greatest threat to the bay should be developed immediately and incorporated into permits.

With regard to oil, the transportation industry on the bay has to be far more strictly regulated than it now is to prevent the continuation of damaging oil and other hazardous material spills.

Millions of pounds of pesticides are applied within the bay watershed every year. We must act decisively to strengthen the control of those pesticides to prevent surface and groundwater contamination.

We must accelerate the implementation of the pretreatment provisions of the Clean Water Act. To date, as you know, only Maryland has an authorized pretreatment program.

Let me turn to air pollution for a moment, something that doesn't get a lot of attention on the Bay.

Twenty-five percent of all nitrogen and millions of pounds of toxics enter the bay annually through atmospheric deposition. The Federal Government and the States must begin focusing above the horizon, if you will, on air pollution as a cause of the bay's degradation. You in Washington, with the President, can move rapidly to break the log jam and reauthorize the Clean Air Act as well as move rapidly on national acid rain legislation.

With non-point source pollution, Congress has provided funds, as you said, for section 319 of the Federal Clean Water Act. EPA now must put those to work.

Congress should broaden the conservation reserve program to extend authorization and increase the acreage limits, as Administrator Thomas said. And the Department of Agriculture should do its part by holding the line on refusing subsidies for poor land use practices.

With wetlands, we must implement Federal legislation mandating a net gain wetlands policy. We have lost over 100,000 acres of wetlands in the last several years on the bay. Congress should establish a Federal wetlands acquisition fund as well as a fund to manage and acquire recreational lands.

Let me conclude by simply saying that we should do a better job of listening to the people of this country. They and we are fed up with pollution. It is time to take a stand for a clean environment. While environmental protection is costly, continuation of environmental abuse will ultimately be far more expensive.

Thank you.

Senator MIKULSKI. Thank you, Mr. Baker.

Now, we would like to hear from Mr. Burton.

STATEMENT OF RICHARD BURTON, EXECUTIVE DIRECTOR, VIRGINIA WATER CONTROL BOARD AND CHAIRMAN, WATER QUALITY COMMITMENT GROUP OF THE 1987 CHESAPEAKE BAY AGREEMENT

Mr. BURTON. Good morning, Madam Chairwoman and members of the committee.

One of the advantages or perhaps disadvantages of going late in the program is that many of your points may have already been

made by some of the previous speakers. I would like to take a moment to elaborate on some of the themes or some of the issues and points that have been made by the previous speakers as well as to add some personal points of view as the water quality manager of one of the States involved in the cleanup of the Chesapeake Bay.

As you may be aware, I do chair the regional task force that was formed to draft the water quality strategies that are being developed in response to the 1987 Chesapeake Bay Agreement. I do appreciate the opportunity to speak to you today on this topic. It is of special importance to me in my role as the State's water quality manager for Virginia.

As several speakers before me have told you, a lot has been done in this regard of restoring the bay, and, yet, a lot remains to be done. In the 1960's and early 1970's, national concern about the degradation of our waters led to the passage of the Clean Water Act. This legislation was premised on the fact that no entity alone, not the Federal Government, not the States, and not local governments, can ensure that the necessary programs are implemented to protect water quality.

Because of this, Congress fashioned a law that required that the Federal Government take the lead in setting consistent national policy in this area. At the same time, the law was designed so that the States, as they were ready, could take responsibility for water quality protection programs, leaving the Federal Government in an oversight and policy formulation role.

Under this system, the Federal Government was the primary partner and the States were secondary partners. It is very much with this philosophy that the Chesapeake Bay cleanup programs were initiated.

During the 1970's, the Environmental Protection Agency initiated studies that laid out the problems that exist in this great basin. The States were subsequently brought in to help further identify these problems as well as solutions to them. Again, the Federal Government had the primary role and the States a secondary one.

But now these roles are changing and have changed. In the protection of water quality, we no longer have the Federal Government leading the way in coaxing the States to follow. The States have now emerged as full partners in protection of water quality.

Nowhere is this more evident than in the efforts to restore the Chesapeake Bay. Here, Virginia, Maryland, Pennsylvania, and the District of Columbia are working as full partners with EPA and other Federal departments.

Each of us can point to large numbers of policy and budget initiatives that we individually or collectively have undertaken in recent years. As Governor Baliles pointed out, we have shown in the 1987 agreement and are continuing to show in the strategies that we are developing in response to the agreement that we are willing to broaden that State commitment as further needs are identified.

Although changed, the Federal role remains critical to the success of this unique partnership. Should the Federal commitment wane, it will be difficult for the other partners to fully complete

the cleanup efforts which have become more complex and expensive.

What should the Federal role be in the future? Basically, it must be comprised of two elements. First, the Federal Government must continue its commitment to participate financially in portions of the restoration effort.

Certain portions of this effort can only be successful under Federal leadership. The principal examples are in general water quality research and in research to set and establish water quality standards.

The second element for which the Federal Government should continue to bear responsibility is in the setting of consistent national policy guidance on issues like non-point pollution, on toxics, and on nutrients. This is especially important since we need to ensure that as we initiate new programs and adopt more stringent regulations, industries are not encouraged to relocate to other States or areas where lax requirements may exist.

What I have outlined so far is what I perceive as the changing roles of governmental units involved in the bay restoration. I would also like to use this opportunity to tell you briefly about some of the progress that we have made in implementing the 1987 agreement as well as some future needs.

In July, representatives of the agreement's signatories completed development of a bay-wide strategy that will result by the year 2000 in at least a 40 percent reduction of the nitrogen and phosphorous entering the bay. This will be costly. We project expenditures of about \$30 million in Virginia alone for phosphorous removal alone and \$300 to \$600 million for nitrogen removal.

We are still involved in the preparation of a toxics reduction strategy also called for in the agreement. While it is too early to detail the exact components of the strategy, it will be built on the toxic control requirements of the 1987 amendments to the Clean Water Act and other toxics needs that the partners to the agreement are able to identify.

I would like to mention here as an example of the initiatives which States are willing to take that Virginia recently adopted one of the Nation's first comprehensive toxics control regulations. We believe that this will allow us to achieve the major toxic control goals of the 1987 amendments.

I would also like to again emphasize here the need as we implement the provisions of these amendments for EPA to continue to play a national leadership role in setting standards and ensuring that States minimally meet these standards so that no State gains economic benefits from allowing pollution.

What outcome do we expect from implementing the provisions of the 1987 agreement and the strategies developed in response to it? We expect to reverse the trends of recent years so that we will not see a dying bay but, rather, one that is coming back to life. The turnaround, as you have heard, will not be quick. So, those involved in the cleanup efforts must be willing to make a long-term commitment.

In terms of this long-term commitment, you have asked where we will need stronger Federal commitment or presence. There are two areas where I would suggest you focus some attention.

First, in recent years, we have uncovered many instances in which Federal agencies need to upgrade their facilities for waste water treatment and disposal. Much of this work will be expensive, and it is necessary that it be funded by Congress in a timely way.

A second matter worthy of your attention concerns the enforcement authority which the States have with respect to Federal facilities. The tools that we have to deal with Federal violators are less numerous and less effective than those available to deal with municipal or industrial violations. I believe this shortcoming is worthy of your study to determine if changes are warranted in Federal law.

In closing, I would like to again thank you for this opportunity to tell you about some of the things we are doing as well as some of the needs we anticipate to restore the bay. While we are dealing with many problems, progress is being made. It is important that we continue to have your support in this progress.

Thank you.

Senator MIKULSKI. Thank you.

Now, we turn to the University of Maryland Law School and Mr. Percival whom we understand is a national expert. You are most welcome to give us your advice and insight.

STATEMENT OF ROBERT V. PERCIVAL, UNIVERSITY OF MARYLAND SCHOOL OF LAW

Mr. PERCIVAL. Thank you.

I am Robert Percival. I teach environmental law at the University of Maryland Law School. I am also director of the University's Coastal and Environmental Policy Program.

Efforts to clean up the Chesapeake Bay will be a crucial test of our Nation's ability to translate extraordinary public support for environmental protection into real environmental progress. My testimony focuses on one aspect of the Chesapeake Bay cleanup that has not received much attention here today, and that is the development of the toxics control plan for the bay.

I would like to briefly describe what a group of dedicated students at the University of Maryland who are concerned about toxic pollution in the Bay have been able to accomplish.

Last year when the Bay Agreement was being renewed, it was often said that we don't know enough about toxics in order to be able to develop a control strategy. As a result, the new Bay Agreement specifies that such a strategy would be developed by December of this year.

The students in my environmental law clinic decided that they wanted to find out what we do know about toxics and what we could do in terms of regulatory steps in the meantime. Realizing that it would be important to have scientific expertise, they joined forces with graduate students from the University of Maryland's Toxicology Program.

First, they discovered that the Water Quality Act of 1987 (the new amendments to the Federal Clean Water Act) required the States to undertake significant new initiatives to control toxic water pollutants. The States had to first develop a list of all waters

known or suspected of being impaired by toxics and a list of the sources of that impairment.

Second, they were to develop individual control strategies for controlling sources of toxic pollutants.

Third, they were to promulgate water quality criteria for all toxic pollutants found to be interfering with the designated uses of their waters.

The students decided to monitor and participate in Maryland's process of complying with the Water Quality Act of 1987. When Maryland initially submitted its preliminary list of affected waters, called the 304(l) list, many of the dischargers identified as sources of toxic pollution on that list complained that it was unfair to single them out because they were in compliance with all existing standards. But they failed to note that the only reason they are in compliance is because Maryland, to date, only has water quality standards for six toxic pollutants.

As a result, the students decided to undertake a comprehensive review of existing data to help the State with the process of setting priorities for promulgating new water quality standards for toxics. They looked at the State's 304(l) data base, but they also looked at other data that had either not been considered or had not been available to the State—pesticide inventory data, data from ambient water quality monitoring, and the new reports on toxic emissions required by the Emergency Planning and Community Right to Know Act which provide a very significant new source of information about releases of toxics into the atmosphere and indirect discharges into the sewers.

The students found that while there was major gaps in existing data, there were more than enough data available to the State for it to begin to set regulatory priorities. Their findings are summarized in our own little brochure that we prepared and the comprehensive report which I am submitting for the record.

Senator MIKULSKI. Mr. Percival, first of all, I am going to ask unanimous consent that your testimony go into the record. Second, your findings report, that nice little one you have there, can go into the record. (See p. —.) In terms of the entire report, I am going to leave that to the discretion of the Chair as to the level of detail he wants in the record.

Mr. PERCIVAL. Thank you.

While it is understandable that regulatory officials would focus on problems that are on the front page like the very serious biomedical waste disposal problem, it is also extremely important to focus on the large quantities of toxics pollutants that our study found are routinely being discharged. The students found, first of all, that at least 38 toxic substances are currently being discharged to Maryland waters at levels in excess of EPA criteria for protection of human health or aquatic life. They also found approximately 32 pesticides that are used in such quantities and that possess chemical properties that should make them priorities for setting toxic water quality standards. The reports on toxic emissions filed under the Emergency Planning and Community Right to Know Act also revealed a dozen additional toxic substances that are not currently regulated that are being discharged into Maryland waters.

The students found that the existing data base is incredibly limited. The Maryland Department of the Environment doesn't have any data on toxic discharges for 87 percent of industrial dischargers and 95 percent of the publicly owned treatment works.

Maryland still has not proposed any new water quality standards for toxics. However, the State has now issued an advanced notice of proposed rulemaking that indicates that it will consider setting such standards, and we have submitted our reports as testimony in that proceeding.

Senator MIKULSKI. Mr. Percival, we are going to have to adjourn at 12:30, because both parties have their own separate caucus lunches. As Senator Sarbanes has some questions and so on, I feel what your students have done has been very exciting, and it is a great case study, but could we get to the bottom line rather than the details of the process?

Mr. PERCIVAL. Sure. I will just briefly go through our recommendations.

First, we certainly endorse the recommendations in Governor Schaefer's testimony for actions that can be taken at the Federal level to improve the bay cleanup, especially passage of the Marine Research Act and acid rain control legislation. With respect to the process of developing a toxics control plan for the bay, Mr. Burton's task force has made a very good start, but we would urge consideration of four basic things.

First, the Bay States need to establish consistent bay-wide water quality standards for toxics that extend to all toxics impairing Bay waters and not just to EPA's priority pollutants. Second, we need a coordinated and expanded bay-wide monitoring program for toxics. Third, the toxics control plan needs to incorporate controls on atmospheric deposition of toxics and toxics from non-point sources. Fourth, we need to employ new toxicity tests that incorporate the more sensitive testing methods that are being developed and that will improve on Maryland and Virginia's very good biomonitoring programs.

We have heard a lot today about the extraordinary number of programs and initiatives to protect the bay. They represent a kind of environmental IOU to the public. It is absolutely critical that we all work together to make good on that IOU.

Thank you.

Senator MIKULSKI. Thank you, Mr. Percival.

Again, it is very exciting to hear about what your students did. Obviously, they did that somewhat as volunteers. It is just the kind of thing that we are interested in hearing more about and that they actually presented their testimony at a public hearing on August 26. I bet that was a big thrill.

Were these students from the law school only?

Mr. PERCIVAL. No, they were also students from the university's Toxicology Program, which is based in the Medical School. This was a particularly interesting learning experience for the law students and the scientists to be working together on this project.

One of the things that particularly stimulated them to devote such great volunteer effort was the fact that they realized that they could have a real impact on shaping policy. There is a tremen-

dous amount of enthusiasm among students for getting involved in the Chesapeake Bay cleanup effort.

Senator MIKULSKI. I would like to just say one thing and then come back.

I am a graduate of the University of Maryland's School of Social Work, and I majored there in social strategy and community organization which is the branch in my field where you organize people for self-help and advocacy. I really think you might want to reach out to them, particularly for grass roots people involvement.

Again, it is not only in molecular structures and digging them out that we are going to find the answers to the bay.

Would you please thank the students for me for just even being willing to get out there and do this? I think it is really exciting.

Mr. PERCIVAL. Certainly, Senator.

Senator MIKULSKI. That leads me then to you, Mr. Baker. You have headed up one of the largest volunteer citizens' groups in the bay, and you have established a national reputation for credibility and competency. I want to congratulate you.

You have been a bay watcher for some years now, and one of my questions was, are we running faster to stay in place, or are we really getting anywhere? Could you comment on where you think we are, or do you agree with what Lee Thomas said, that we have bottomed out and now we are going to see improvements?

Mr. BAKER. I guess I would be more in line with your statement than Mr. Thomas'. If anything, the most optimistic statement I can make is that the rate of deterioration may be slowing.

You have to remember that the Chesapeake Bay is a holding tank for pollutants. What comes into the bay does not leave.

Secondly, you have to remember that it is a spawning area and, third, that it is a nursery area. Now, we tell humans when they are pregnant not to take aspirin, not to drink coffee, not to do all the things which for a non-pregnant person not in a spawning mode, if you will, would not hurt them.

Think too of a child's nursery in which we try to minimize the presence of even minute quantities of such hazardous materials as lead paint. In the same vein, small quantities of pollutants in the Chesapeake Bay can have ill effects on juvenile species, especially when they are maintained in the system for years and they accumulate through the food chain.

The Chesapeake Bay is more fragile than other marine areas. We have to handle it differently.

I don't think we are doing enough now. I think the treadmill is speeding up, and we are not keeping up with it.

Senator MIKULSKI. I am going to turn to my colleague, Senator Sarbanes, and come back for another round.

Senator SARBANES. Thank you very much. I will be very brief.

First of all, I want to put this question to all three members of the panel, and I want to shift off of substance for the moment to structure, because I have been very concerned throughout that we at least get a structure into place that is placing responsibilities where they ought to be, coordinating, and so forth so that things don't slip between the cracks or fall between the stools.

As you perceive it now, what structural changes are needed, or have we finally put a structure into place that is comprehensive

with the States, the EPA, the commission, the private involvement? What other things might be done to strengthen the framework of analysis and the focus of decision making? Does anyone have any ideas on that?

Mr. BURTON. Senator, I think one of the concerns that eventually led to the signing of the 1987 agreement was precisely that concern. In 1983, a very general statement of cooperation was signed among the States and EPA, and I think during the deliberations that have been referred to by the Governors and the Mayor this morning, you saw the drawing together of the chief executives of the principal parties involved.

In the signing of that agreement, we now have the principal executives serving as the Chesapeake Bay Executive Council. Prior to that agreement, the Governors and the Mayor did not serve as a council overseeing the program of cleaning up the bay. I think that is a major step forward in the structuring of the organization.

Senator SARBANES. Do you see any agencies or organizations that are left out of this process that ought to be brought into it somehow?

Mr. BURTON. Senator, that has been one of the success stories, I believe, of the Chesapeake Bay program. I am not sure that we have left anyone out, including all citizens within the bay. As Governor Schaefer indicated this morning, there are numerous programs to get everyone involved.

I guess I have one observation related to an earlier question that you asked another speaker with respect to memos of understanding. One of the concerns that I have as a State regulator who is in charge of the enforcement of the laws and regulations that we have is that memos of understanding are sometimes nice expressions of how we should do business, particularly with Federal facilities.

I would prefer binding and enforceable enforcement actions, either administrative or court imposed. I am concerned about reliance on memos of understanding and plans rather than binding enforceable documents.

Mr. PERCIVAL. Senator, I would like to respond with respect to the structure of how the States implement the new amendments to the Federal Clean Water Act. At times, EPA's policy of responding by issuing to the States guidance that is often not terribly clear about what it expects to see the States do to implement Federal legislation has led to unfortunate delays in implementation. One example that I would cite that I am familiar with concerns the toxics control strategy. The State of Maryland, at the time that it proposed to consider adopting water quality standards for toxics, also proposed to establish a variance procedure that would allow dischargers who would otherwise violate water quality standards for toxics to continue doing so.

It was our belief that that would be a clear violation of the language of the Federal law, but due to the confused state of guidance from EPA, the Maryland Department of the Environment issued that proposal. So, I think that EPA could improve the quality of the guidance that it gives to the States about implementing these amendments.

Mr. BAKER. I have little to add. Governor Schaefer said it would be nice to have a czar, and I think it would, but for all practical

purposes, that may never happen. The only thing I would like to add is that although all the agencies have been asked to participate in Bay restorations, at least one is not setting a good example, and that is DOD and related Federal facilities.

I think you heard from Mr. Burton that he would like to have greater authority to enforce laws related to Federal facilities. I agree. The Federal Government and its facilities must to be a model. Not a recalcitrant, participant, in the bay cleanup.

Senator SARBANES. Well, I think that is a very important point. Let me just close with this observation.

As I understand it, the Federal agencies and more than 30 organizations involved in the bay have also been asked to submit testimony for the record with respect to this subject matter before us, and we expect to follow up to the agencies with additional questions. I want to express again my appreciation to Senator Mitchell and to Jeff Petersen, his staff person, for putting the hearing together.

My perception of what is at work here is really the constructing of the agenda which would be before us in the next Congress and before the next Administration. Obviously, this Congress is about to finish in a matter of two or three weeks. While there is some chance that perhaps the Clean Air Act may move which is relevant here, as far as legislative initiatives, I don't anticipate those in this session.

However, as Will Baker has done, it is a very comprehensive and thoughtful statement that you have submitted. I had a chance to go through it quickly, not with great care, but you and your people have obviously given a great deal of thought to what now ought to be on the agenda, what additional things can be addressed at the Federal level, both more broadly in terms of general standards and policies which I think relates a bit to the point that Mr. Burton made which I thought was very effective, that "EPA continue to plan a national leadership role in setting standards and ensuring that States meet these standards so that no State gains economic benefits from allowing pollution."

I think that is a very important point and a prime responsibility of the EPA. So, doing it on the cheap or cutting the corners or ducking out doesn't enable some State to gain an economic advantage with those that are trying to be the good actors, and that is where their regulation and enforcement comes very much into play.

Will, this is, in my view, a very helpful statement, and I think what we are doing here is pulling together the base of data and analysis that will then constitute our ability to make the next move forward which, obviously, we have to do. We want to get rid of *deja vu*, I may say.

Thank you all very much.

Madam Chairwoman, thank you.

Senator MIKULSKI. I think Senator Sarbanes covered many of my questions, and I would just like to wrap up this hearing.

First, I would thank you, Mr. Baker, for that detailed testimony. I think if we went down that as a checklist, we would be pretty much farther along.

What I would also like you to submit for the record is you came out with some pretty darn good recommendations on the oil spill issue. As you know, we had the major spill up around the Potomac this summer, and it was due not to malevolence or a midnight dumper; it was just due to sloppiness. That, again, points out co-ordination issues, particularly related to the United States Coast Guard which we have not talked about here and their role on the bay.

So, we would like to have that, because I think as we look at overall cleanup, oil spills are vulnerable in a bay that is used for cargo transmission.

Mr. Percival, we are just so glad that you have undertaken the particularly monitoring and study of toxics which, of course, takes you into hazardous waste activity. You heard some of my questions to the Administrator and to others on the issue of biomedical waste.

I would really like to ask you as one of the bay Senators and as the bay Senator from Maryland who is on this committee if the University of Maryland and the units that you oversee would review some of the legislation pending on medical waste, because I know it is of great concern to our Governor, and really to tell us where you think that legislation is on the right track and how it could be improved.

I would also like you to thank those students who just got out, pulled up their khaki pants, pulled out their legal pads, and there were no billable hours on this.

I see some people in the back. Did you bring some of the students with you?

Mr. PERCIVAL. No, they are in class today but I am going to try to show them a tape of part of today's hearing.

Senator MIKULSKI. Well, I hope you will thank them for that.

Mr. Burton, as the executive director of the Virginia Water Control Board, we would like to thank you for all sides of the bay for working with us. Your testimony was excellent, and I think the issue of State disadvantages, Senator Sarbanes, should be addressed.

I am from a generation that read and knew something about how Virginia and Maryland fought each other in tong wars and were literally at war with each other. It is so great to know that the Governors and all of us, including the United States Senators, are working together on this.

I would like to compliment you for our Maryland people for the really collegial and cooperative way you have worked with Maryland and all of us. We look forward to your advice and technical expertise.

So, having said that, we would like to thank you for the role that you have played in this hearing. It is a lot to sift through, but at least today, none of it was toxic.

Thank you very much.

This committee stands adjourned.

[Whereupon, at 12:26 p.m., the committee adjourned, to reconvene at the call of the Chair.]

[Statements submitted for the record follow:]

STATEMENT OF
WILLIAM DONALD SCHAEFER
GOVERNOR OF MARYLAND
ON THE
CHESAPEAKE BAY AGREEMENT
BEFORE THE
U.S. SENATE ENVIRONMENT & PUBLIC WORKS COMMITTEE
SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION
SEPTEMBER 20, 1988

Mr. Chairman and members of the subcommittee, I want to thank you for holding this hearing on the Chesapeake Bay Agreement.

The recurring news this summer about infectious medical wastes and oil from spills washing up on our beaches has reawakened the public to the need to move swiftly in addressing our environmental problems. But we have known for some time the depth of our problem by what is missing from our waters. What is not there is the plentiful bounty of fish and shellfish that once crowded our waters. Our oyster harvest is a fraction of what it was and many important bird populations have also been devastated.

I don't need to tell anyone how vigilant this subcommittee, under your fine leadership, Mr. Chairman, has been in responding to the many environmental problems facing us. This subcommittee puts aside political differences in the interest of finding environmental solutions. I hope this renewed public concern will prompt the Congress to move quickly on the many important pieces of legislation reported out by this subcommittee -- such as the Clean Air Amendments and legislation on medical waste and ocean dumping.

The hearings today on the Chesapeake Bay --our nation's largest and most productive estuary-- are further evidence of this subcommittee's strong commitment to the environment. And I am particularly pleased that the goal of the hearing is to identify what the federal government needs to do to meet the challenge of the new Chesapeake Bay Agreement. A strong federal partner is critical if we are going to be successful in restoring the Bay to health.

To the earliest American natives, Chesapeake meant "Mother of Waters." This name recognized the Bay as a nursery for many valuable fish and shellfish. Similarly, the Chesapeake Bay Agreement and the programs implementing it are a nursery for ideas on how to restore the beauty of all our estuaries.

Our Chesapeake Bay Agreement is a model. Our experience in developing and implementing the Agreement provides us with many lessons to share with other estuaries. It provides examples of regional cooperation. It provides lessons on how to apply scientific knowledge to practical public policy. It provides

lessons on how to channel and manage growth. Perhaps most important, it provides lessons on how to build a consensus -- a consensus of public opinion and a consensus for action among federal, state and local governments.

We want to use our experience as a model for all of America's coastal waters. Towards that end, I have been appointed by Governor Baliles, Chairman of the NGA, to lead a Governors' task force on ocean pollution. The Governors are anxious to meet their responsibility to work with you to chart a course that will help restore our oceans.

To be successful in restoring the Bay to health will require the active participation of individuals, business and government. There can be no silent partners. Our task is daunting. As you know, the Bay Agreement calls for, among other things, a forty percent reduction in nutrient pollution by the year 2000.

Maryland will spend over \$80 million this year for a variety of Bay cleanup programs. And our financial commitment is growing. To meet the nutrient pollution abatement goals in the new Agreement, Maryland will spend over \$330 million in additional funds. Our partner states will make similar financial commitments, and that is just one of the dozen commitments spelled out in the Agreement.

Most of the burden for Chesapeake Bay programs will be rightly shouldered by the Bay states. But we also need continued federal help. Led by the EPA, the federal government is a full partner in the Agreement. Five federal agencies play a major role in the Bay programs to help improve water quality, enhance our living resources, and improve public access. The subcommittee recognized the importance of the Chesapeake Bay by authorizing \$52 million in the Clean Water Act for the cleanup effort.

While existing federal programs are working, more are needed. Through the leadership of our distinguished Maryland Senators, Barbara Mikulski and Paul Sarbanes, new demonstration projects essential to oyster disease research and toxics identification were approved by the Senate this year.

This is certainly a good start on our efforts to step up the federal effort on the Bay. I am confident that the federal initiatives I put on the table today will get us closer to the goal of stemming the tide of our Bay's pollution problems.

My proposals:

- * Create a national education and volunteer demonstration program to increase public awareness of the importance of preserving the Chesapeake and other estuaries. Based on our state program, I envision this effort to grow from one

million Marylanders concerned about the Chesapeake to a national program of 250 million Americans committed to cleaning our nation's waters.

- * Coordinate regional estuary research: Passage of the Marine Research Act is necessary.
- * Protect the Bay's natural and cultural heritage: 1) Passage of the American Heritage Act is necessary; 2) An Interior Department study is needed to assess the federal role in preserving and restoring the Bay's natural heritage.
- * Use offshore oil receipts to provide additional funds for waste water construction and nonpoint source initiatives in the Clean Water Act.
- * Pass the amendments to the Clean Air Act -- Acid Rain.

I. National Education and Volunteer Program

I believe that education and cooperation are essential to the success of the Chesapeake Bay Agreement. If the Agreement is to be more than words, we will need the support of all levels of government, the business community, farmers, and all the people. People need to understand what the problems are, and they need to participate in decisions on how to solve them.

The actions of all of us in the Bay states affect the health of the Chesapeake Bay. Let me bring this home to you. Approximately 95 percent of the land in Maryland drains into the Bay. Roughly 50 percent of the land in Virginia and Pennsylvania and 100 percent of the land in the District of Columbia drains into the Chesapeake.

So whether we're talking about farmland outside of Harrisburg, city streets in D.C., or a lawn in suburban Falls Church, the motor oil we pour down the drain, the fertilizers on our lawns, and the pesticides on our crops eventually find their way into the Chesapeake Bay.

As a start, in my state I initiated a campaign to get one million Marylanders to help clean up the Chesapeake Bay. In fact, I want everyone in this room to take one of these brochures on "10 Ways You Can Help Clean Up the Bay," and sign up to help. We want to mobilize church groups, Boy Scout troops, civic clubs, senior citizens and businessmen.

In Maryland, we are reaching out to people through the newspapers, television and radio. Through education programs in the schools we are reaching out to the next generation. We bring

children out to the Chesapeake to experience the problems first hand.

While this citizen education program will benefit the Bay states, its application could be national. Signing up one million Marylanders to work on the Bay can be a prelude to signing up 250 million Americans to help clean our nation's waters.

The federal government can help in two ways. First, the federal government can provide additional resources to assist the Bay states in their education programs. The EPA's National Estuary Program can devote resources to help us reach out to more students by educating teachers and helping us develop a set of materials for our media campaigns. Second, once we know what works, we should put together educational kits that can be used across the nation. These kits should educate the public about our stake in the environment, identify the problems we face and tell each of us how we can help participate in the solution.

II. Coordinate regional estuary research: Passage of the Marine Research Act is necessary.

The enormity of the cleanup problem before us is staggering. I get frustrated. I want to know when the Bay will be clean. I want it "fixed" now for our children so it won't have to be fixed later by our children. When I look for answers I only get fragmented pieces of the problem. The scientific research is uncertain and its conclusions are, at times, conflicting. But from this uncertain science must come definite decisions on how to spend limited dollars.

One of the major problems is the lack of a coordinated research effort. A Comprehensive Research Plan was developed in response to the Chesapeake Bay Agreement. The plan calls for the establishment of a research committee to set Bay-wide research priorities. Although such an organizational structure will promote research coordination, there is no requirement for federal agencies to be responsive. I am pleased to see that this subcommittee approved legislation, the Marine Research Act, that would provide authority to establish centers to support and coordinate marine research on regional environmental issues. Only through a coordinated regional effort can we get the kind of clear and consistent scientific advice that is so necessary for solving complex problems like oyster diseases and toxic pollution.

III. Protect the Bay's natural and cultural heritage: 1) Passage of the American Heritage Act is necessary; 2) An Interior Department study is needed to assess the federal role in preserving and restoring the Bay's natural heritage.

The richness of the Chesapeake lives in its natural and cultural

heritage. Our efforts to save the Bay rest on protecting the natural resources and preserving the cultural symbols that define this treasure.

The Bay's natural heritage depends on preserving and restoring the Chesapeake as a vital ecosystem. We must remember that the living resources are sustained by the land as well as the water. A varied habitat --of forests, wetlands, flood plains, and beaches-- must be linked to the natural requirements of the living resources. Unrelated bits and pieces of land along the Chesapeake will not sustain the life in the Bay.

The blue crab, so long favored as a Chesapeake delicacy, mates in Maryland waters, but the female crabs give birth in Virginia. The young spend their formative years in Virginia before returning home to Maryland. Similarly, the striped bass --whose population is coming back thanks to federal/state cooperative efforts-- spawns in fresh waters but lives most of its life in the ocean. Critical land bordering both areas needs proper management to sustain these living resources.

In Maryland, our Open Space Program provides a crucial first step. Under Open Space, we have set a goal of preserving ten percent of the state as parks through a small tax on real estate transfers that has raised over \$444 million. When you buy your Maryland home, you also help purchase the park land you enjoy. Increasingly, we are using our Open Space Program and local cooperation efforts to identify and purchase critical habitat areas along the Bay.

In addition, we in Maryland are protecting the natural heritage through our Critical Areas Law. The goal of this law is to reduce the impact of development on water quality, fish, wildlife and plant habitats, by controlling growth in environmentally sensitive areas along the Bay. Further, the Bay Agreement calls for a regional cooperative solution to growth management. A panel of experts, established by the Agreement, is examining long term regional solutions for managing the Bay. Implementation of their recommendations will require cooperation from all levels of government and the private sector. The panel is asking for public comments right now.

We are also preserving our heritage in Maryland by protecting and restoring the Bay's maritime culture. I want to commend the Congress for recognizing the importance of our maritime heritage. Legislation was passed in this Congress to permit states to protect historic shipwrecks. Historic Preservation Funds are available to the states to assist them in preserving historic maritime-related sites and artifacts. The Bicentennial Lighthouse Fund has provided assistance to the states in the preservation of historic lighthouses.

I encourage you to continue to adequately fund these programs. Maryland, with the assistance of funds from the National Trust for Historic Preservation, has completed a survey of the "skipjack" fleet. These working sailing ships are a living museum. Maryland is working to preserve these sailing vessels, used to harvest oysters on the Bay.

To enhance Maryland's efforts, Congress should pass the American Heritage Act. This legislation establishes a permanent self-sustaining fund for the Land and Water Conservation and Historic Preservation Funds. This permanent fund is critical to Maryland which has seen monies from the Land and Water Conservation Fund, for example, decline from several million dollars to just a little over \$300,000 a year. Money from this federal source is used to protect our important natural and historic resources.

No one state alone can restore the Bay. No unilateral state action can protect enough of the natural habitat to meet the requirements the Bay's living resources. As a first step, we need a federal study to identify which ecologically sensitive areas in the multi-state watershed need to be set aside to maintain living resources and provide essential public access. The study should also recommend the best method of protecting and in some cases, restoring these vital natural areas. Different areas will require different types of protection. For example, while some areas may need to be purchased, others can be set aside with easements.

Finally, the study should examine which level of government or the private sector is best able to obtain and administer the land. A regional effort requires that often divergent interests be blended together. The various governmental bodies --federal, state, and local-- and the private sector, must implement policies cooperatively. In addition to identifying who should administer the land, we need to know how much it would cost and how to use state, federal and local funds to get the most for our money.

The time to do this study is now. Our critical habitats are rapidly being destroyed. If we delay in meeting this responsibility, we will only be left with tiny pockets of open space --museums of our natural past-- not gateways to a bountiful Bay.

IV. Use offshore oil receipts to provide additional funds for waste water construction and nonpoint source initiatives in the Clean Water Act.

All of you know that improving waste water treatment plants and curbing nonpoint source pollution are critical to the success of the Bay cleanup effort. I know that you know this, because of the resources this subcommittee authorized in the Clean Water

Act. Unfortunately, the assistance you fought for has turned out to be an empty promise.

We all know that state and local governments are supposed to shoulder the burden of the waste water construction program through revolving loan funds. However, the resources the federal government committed to help establish this fund have yet to be given. This year funds for construction projects are more than one half billion dollars below authorized levels.

This is unacceptable for Maryland. The waste water construction program is essential to Maryland's strategy on point sources -- to upgrade sewage treatment plants and remove harmful nutrients. Our commitments under the Bay Agreement require us to step up our efforts. Maryland will have to spend \$1.3 billion over the next fifteen years on waste water construction. \$200 million of that will be devoted strictly to meeting the nutrient goals of the Bay Agreement. Yet, we can only count on \$400 million from current sources of federal, state and local funds, leaving us a shortfall of well over \$900 million.

Similarly, Maryland will have to raise \$130 million to meet its nonpoint nutrient pollution commitments under the Bay Agreement. While the Clean Water Act authorized \$400 million for a national nonpoint source program, not one dollar has been appropriated.

The national nonpoint source pollution program is essential to our strategy for controlling sedimentation, erosion, and farm and urban runoff. Maryland's soil conservation programs include "Best Management Practices" on nearly 80,000 acres of our farmland. Our "Green Shores" program expends \$400,000 to plant trees on erodible land. Trees are one of the best ways to control erosion and reduce nutrient pollution.

I know that the Congress is under funding constraints that make it difficult to provide sufficient funding for many environmental programs. But our dwindling federal expenditures have reduced waste water construction funds to the point where state programs are barely viable. The nonpoint source program has never even gotten off the ground.

These are needs that we cannot run away from. Each year the problems get more costly. In addition, we cannot take funds from one of these programs at the expense of the other. "Robbing Peter to pay Paul" will not solve our nutrient pollution problem. As a start towards a solution, we should look at alternative financing mechanisms. On the federal level, I think using the receipts from offshore oil leases would be a good start. A similar funding proposal is being promoted to underwrite the Land and Water Conservation Act.

In both cases, the justification for using the offshore oil

receipts is the same. Funds from publicly owned, nonrenewable, ocean energy resources would be used to improve our natural infrastructure. It's a proposal that incorporates sound conservation principles with good business sense.

An additional step that could help to address the nonpoint source pollution problem would be to change the Conservation Reserve Program. Through recent changes in the CRP, Maryland has been able to set aside nearly 8,000 acres of highly erodible farmland. To encourage farmers to set aside and not plant on this land, the state has added additional financial incentives to this federal program.

Shoreline erosion creates two problems for the Bay. First the land carries with it excessive nutrients which rob the water of oxygen vital to fish. Second, the soil floats in the water and cuts off light from the sun. If you can't see down into the water, it is equally true that plants in that water cannot see the sun. Without light, these plants, which provide vital habitat for young fish, will die.

There are two actions the federal government can take to increase the benefits of the Conservation Reserve Program for the Bay. The first is to increase the number of acres participating in the program. We can do this by extending the deadline beyond the deadline of June 3, 1991, and increasing the cap on the enrollment from 45 million acres to 60 million. Increasing the acreage cap to 60 million and lengthening the enrollment period will allow even more highly erodible acres to be removed from production. The second action is to ask the Soil Conservation Service to adopt forested buffers along natural water courses as a Best Management Practice.

V. Pass the amendments to the Clean Air Act -- Acid Rain.

My last proposal is to urge that the amendments to the Clean Air Act be passed in this Congress. As I wrote to the Chairman, there is increasing evidence that the emissions that cause acid rain are also a major culprit in nutrient pollution in the Chesapeake Bay. As much as one fifth of the harmful nitrogen may come from airborne sources. I applaud your efforts and those of this subcommittee in attempting to pass this legislation. We need this legislation now.

We will be known in the future by what we preserve today. If the Chesapeake Bay Agreement becomes an empty promise and not an existing reality, then our children will not know the pleasure of sitting beside unspoiled streams, or experience the great Maryland tradition of feasting on crabs and oysters. That option is unacceptable. Our failure to preserve our nation's bays for our children will impoverish their lives, their dreams and our legacy.

Mr. Chairman, we are in a race to restore the Chesapeake Bay. We must run faster than the changes we are continuously confronting. Winning the race depends on all of us running to the same finish line. Our regional cooperation efforts are the best lesson to glean from the Bay experience. It is our partnership, sealed in the agreement, that ensures the legacy of a healthy Chesapeake Bay.

STATEMENT

BY THE

HONORABLE MARION BARRY, JR.

MAYOR

DISTRICT OF COLUMBIA

ON THE

CHESAPEAKE BAY PROGRAM

BEFORE THE

SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

SEPTEMBER 20, 1988

GOOD MORNING MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION. IT IS MY PLEASURE TO APPEAR BEFORE YOUR SUBCOMMITTEE AS THE ONLY ORIGINAL SIGNATORY OF THE 1983 CHESAPEAKE BAY AGREEMENT OF 1987. SINCE 1964, WHEN PRESIDENT LYNDON B. JOHNSON CALLED THE POTOMAC RIVER A "NATIONAL DISGRACE", THE DISTRICT OF COLUMBIA HAS MOVED FORWARD WITH A COMPREHENSIVE COMMITMENT TO THE REHABILITATION AND PRESERVATION OF THIS IMPORTANT NATIONAL RESOURCE. I AM PROUD TO SPEAK OF THE PROGRESS WHICH HAS BEEN MADE ON THE POTOMAC AND THE FACT THAT OUR CITIZENS ARE ENJOYING THE FRUITS OF OUR LABOR.

WE HAVE NOW TURNED OUR ATTENTION TO THE OTHER IMPORTANT RIVER IN OUR CITY - THE ANACOSTIA. I FORESEE THE DAY WHEN THE DISTRICT OF COLUMBIA WILL HAVE TWO MAJOR WATER WAYS FOR THE USE OF ITS CITIZENS, WITH RESTORED WILDLIFE, FISH AND MARINE LIFE, AND PLANT LIFE.

IN 1983, WITH THE SIGNING OF THE FIRST CHESAPEAKE BAY AGREEMENT, THE DISTRICT MADE SEVERAL COMMITMENTS CONCERNING THE RESTORATION AND PROTECTION OF THE BAY. I AM PLEASED TO REPORT THAT WE HAVE MET ALL OF THESE COMMITMENTS. THEY INCLUDE:

- ° THE PASSAGE OF THE DISTRICT OF COLUMBIA WATER POLLUTION CONTROL ACT OF 1984 TO REGULATE THE RESTORATION OF THE DISTRICT'S WATERWAYS AND THE PROTECTION OF FISH, AQUATIC LIFE AND HABITAT;
- ° THE CONSTRUCTION OF COMBINED SEWER OVERFLOW FACILITIES ON THE POTOMAC AND ANACOSTIA RIVERS;
- ° THE DEVELOPMENT OF FISHERIES MANAGEMENT AND AQUATIC EDUCATION PROGRAMS;
- ° THE CONSTRUCTION OF FACILITIES TO REDUCE DISCHARGES OF TOXIC CHLORINE AT THE REGION'S LARGEST WASTEWATER TREATMENT PLANT AT BLUE PLAINS;
- ° THE DEVELOPMENT OF EROSION CONTROL AND STORM WATER MANAGEMENT PROGRAMS;
- ° THE COORDINATION OF POTOMAC RIVER MONITORING PROGRAMS WITH THE BAY STATES AND EPA; AND,
- ° THE CONTINUATION OF BEING AN ACTIVE PARTNER IN THE POTOMAC RIVER STRATEGY.

IN ADDITION, IN 1984, WE ENTERED INTO THE ANACOSTIA WATERSHED RESTORATION STRATEGY AGREEMENT WITH THE STATE OF MARYLAND TO INITIATE WORK ON THE CONTROL OF POLLUTANT AND SEDIMENT LOADINGS TO THE RIVER. WE ALSO HAVE INSTITUTED A PHOSPHATE DETERGENT BAN AND ESTABLISHED AN INDUSTRIAL PRETREATMENT PROGRAM.

BUT, EVEN WITH THE PROGRESS THAT WAS MADE, IT IS CLEAR THAT THE 1983 AGREEMENT NEEDED TO BE REVISED TO INCLUDE MORE SPECIFIC OBJECTIVES FOR OUR CONTINUING EFFORTS TO RESTORE AND PROTECT THE BAY. THEREFORE, I WAS PLEASED TO SIGN THE CHESAPEAKE BAY AGREEMENT OF 1987.

IN RESPONSE TO THE NEW AGREEMENT, THE DISTRICT OF COLUMBIA HAS WORKED WITH THE OTHER SIGNATORIES TO DEVELOP THE MANY REQUIRED IMPLEMENTATION DOCUMENTS, WHICH INCLUDE THE BASINWIDE NUTRIENT REDUCTION STRATEGY, THE BASINWIDE CONVENTIONAL POLLUTANT REDUCTION STRATEGY, AND, THE BAYWIDE COMMUNICATION PLAN. THESE DOCUMENTS WILL ESTABLISH THE

FRAMEWORK FOR THE DISTRICT'S BAY RESTORATION ACTIVITIES OVER THE NEXT SEVERAL YEARS. THE DISTRICT HAS ALSO ASSISTED IN THE FUNDING OF THE CHESAPEAKE BAY ACCESS GUIDE IN THEN COOPERATION WITH THE BAY STATES AND THE ALLIANCE FOR THE CHESAPEAKE BAY.

DURING 1988, THE DISTRICT GOVERNMENT HAS BEEN INVOLVED IN THE FOLLOWING PROJECTS AND PROGRAMS:

- ° PROMULGATING STORM WATER MANAGEMENT REGULATIONS REQUIRING THE USE OF BEST MANAGEMENT PRACTICES FOR ALL NEW DEVELOPMENT AND REDEVELOPMENT TO CONTROL POLLUTION FROM URBAN RUNOFF;
- ° RENEWING THE ANACOSTIA WATERSHED RESTORATION STRATEGY AGREEMENT WITH THE STATE OF MARYLAND THE EFFECTED LOCAL JURISDICTIONS WHICH ARE PRINCE GEORGE'S AND MONTGOMERY COUNTIES;
- ° EXPANDING OUR AQUATIC EDUCATION PROGRAM BY BEGINNING THE CONSTRUCTION OF AN AQUATIC EDUCATION CENTER AND BOAT RAMP IN ANACOSTIA PARK IN COOPERATION WITH THE NATIONAL PARK SERVICE AND THE U.S. FISH AND WILDLIFE SERVICE;

- ° IMPLEMENTING A SPORT FISHING LICENSE PROGRAM TO PROVIDE A REVENUE SOURCE FOR THE DEVELOPMENT OF FISHERIES MANAGEMENT PROGRAMS AND TO FURTHER EDUCATE THE PUBLIC IN THE MANAGEMENT OF OUR FISHERIES RESOURCES;
- ° BEGINNING CONSTRUCTION OF EROSION CONTROL MEASURES ALONG WATTS BRANCH, A MAJOR TRIBUTARY OF THE ANACOSTIA RIVER, IN COOPERATION WITH THE SOIL CONSERVATION SERVICE OF THE U.S. DEPARTMENT OF AGRICULTURE; AND,
- ° COMPLETING CONSTRUCTION OF A SWIRL CONCENTRATOR NEAR ROBERT F. KENNEDY STADIUM TO REDUCE POLLUTANT AND SEDIMENT LOADINGS TO THE ANACOSTIA RIVER AS PART OF PHASE I OF THE COMBINED SEWER OVERFLOW ABATMENT PROJECT.

IN CONCLUSION, THE DISTRICT OF COLUMBIA IS COMMITTED TO ACHIEVING ALL THE GOALS AND OBJECTIVES OF THE CHESAPEAKE BAY AGREEMENT OF 1987. WITH THE CONTINUING LEGISLATIVE AND FISCAL SUPPORT OF THE CONGRESS, WE WILL BE ABLE TO BUILD UPON THE FOUNDATION ON WHICH RESTORATION EFFORT HAS BEGUN. AND, AS STEWARDS OF THE POTOMAC AND ANACOSTIA RIVER, WE ARE COMMITTED TO THE RESTORATION OF THE BAY, THE PRESERVATION OF OUR NATURAL RESOURCES AND THE DEVELOPMENT OF A PUBLIC CONSCIOUSNESS AND CONSTITUENCY FOR THE ENVIRONMENT.

1. ARE ANY CHANGES NECESSARY IN THE 1986 CLEAN WATER ACT MODIFICATIONS TO THE COASTAL ZONE MANAGEMENT ACT, THE FOOD SECURITY ACT OR THE EMERGENCY STRIPED BASS ACT?

o Coastal Zone Management Act

The District of Columbia is not included in this Act and we believe that we should be. Most of the waters in the District are tidal and should be managed accordingly. We recommend that the Act be amended to include the District of Columbia.

o Food Security Act (Conservation Reserve Program)

The District is not directly affected by this program, however, much of the upper Potomac Basin is agricultural and affects the quality of the water which flows through the District.

We support a strong agricultural non-point source control program in the upper Potomac Basin.

o Emergency Striped Bass Act

The District has regulations prohibiting the catching of striped bass during the spawning season and is actively enforcing the regulations.

2. WHAT ADDITIONAL LEGISLATION, FUNDING OR PROGRAM RESOURCES ARE NEEDED TO ENSURE EFFECTIVE IMPLEMENTATION OF COMMITMENTS UNDER THE CHESAPEAKE BAY PROGRAM?

o The present level of funding authorized by the Act for municipal wastewater treatment plants will not be adequate to meet the District's needs for:

o Combined Sewer Overflow Abatement

o Sludge Disposal

o Upgrade of Blue Plains

o Additional nutrient removal if necessary for nitrogen.

o There is a need to fully fund the Chesapeake Bay Program at its authorized level of thirteen million dollars (\$13 million).

o There is a need to fully fund Section 319 of the Clean Water Act at one hundred million dollars (\$100 million) per year. The retrofit of developed urban areas such as the District of Columbia for non-point source controls is going to be extremely expensive.

o The environmental protection and enhancement of many of the federal facilities on the Bay is a function of their budgets. We believe that a concerted effort should be made to ensure that adequate funds are available in their budgets to address environmental concerns.

3. WHAT IS YOUR ASSESSMENT OF INTERAGENCY COOPERATION IN THE BAY EFFORT? HOW CAN THIS COOPERATION BE IMPROVED?

The U.S. Fish and Wildlife Service, Corps of Engineers, National Park Service, the states of Maryland and Virginia and the District of Columbia are presently engaged in a cooperative effort to restore fish passage over Little Falls Dam on the Potomac. This will increase the spawning areas available for shad and herring.

This effort, along with the Anacostia Watershed Restoration Strategy Agreement and other projects being undertaken cooperatively by the District, Maryland, the Soil Conservation Service, the National Park Service and the Fish and Wildlife Service along the Anacostia point to the excellent cooperation and coordination by federal and non-federal agencies in the Bay clean-up effort.

4. HOW IS THE FEDERAL COORDINATION OF PROGRAMS EFFECTIVE IN COORDINATING A COMPREHENSIVE RESPONSE TO COASTAL DEGRADATION?

We believe that the Environmental Protection Agency has been most effective in marshalling the efforts of the other federal agencies and they are to be commended.

5. WHAT NEW INITIATIVES SHOULD THE FEDERAL GOVERNMENT TAKE TO SUPPLEMENT THE BAY EFFORTS?

We believe that there are three major areas where much work needs to be done:

- o Acid rain is changing the chemical characteristics of our lakes, streams and rivers;
- o Airborne toxics and nutrients pose a presently unquantified threat; and
- o The groundwater which feeds our rivers and streams needs more attention.

6. BASED ON THE DISTRICT'S EXPERIENCES IN THE CHESAPEAKE BAY PROGRAM, DO YOU HAVE ANY SUGGESTIONS ON HOW TO PROTECT OTHER ESTUARIES OR COASTAL AREAS AROUND THE COUNTRY?

There is one fundamental need for establishing a massive restoration program - public support.

Public support is based upon providing the citizens with timely and accurate information upon which they can make their decision to support the necessary expenditure of funds.

CHESAPEAKE BAY COMMISSION

TESTIMONY BEFORE THE SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION OF
THE UNITED STATES SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

SEPTEMBER 20, 1988

DELEGATE W. TAYLOE MURPHY, JR.

GOOD MORNING, LADIES AND GENTLEMEN. MY NAME IS TAYLOE MURPHY AND I AM A DELEGATE IN THE VIRGINIA GENERAL ASSEMBLY FROM THE NORTHERN NECK OF THE COMMONWEALTH OF VIRGINIA. I AM ALSO CURRENTLY SERVING AS CHAIRMAN OF THE CHESAPEAKE BAY COMMISSION. I APPRECIATE THE OPPORTUNITY TO APPEAR BEFORE YOU THIS MORNING WITH THE OTHER SIGNATORIES TO THE 1987 CHESAPEAKE BAY AGREEMENT AS YOU REVIEW THE PROGRESS OF THE PROGRAMS WHICH HAVE BEEN PUT INTO PLACE TO RESTORE AND PROTECT THE CHESAPEAKE BAY.

AS YOU MAY KNOW, THE CHESAPEAKE BAY COMMISSION IS A TRI-STATE LEGISLATIVE ADVISORY COMMISSION DESIGNED TO ASSIST THE LEGISLATURES OF MARYLAND, VIRGINIA AND PENNSYLVANIA IN ADDRESSING CHESAPEAKE BAY-RELATED ISSUES OF MUTUAL CONCERN TO OUR THREE STATES. OUR MEMBERSHIP CONSISTS OF SEVEN REPRESENTATIVES FROM EACH OF THE SIGNATORY STATES--FIVE OF OUR MEMBERS FROM EACH STATE ARE LEGISLATORS, ONE IS A DESIGNEE OF THE GOVERNOR AND ONE IS A PRIVATE CITIZEN. COMMISSION MEMBERS HAVE BEEN INTIMATELY INVOLVED IN THE DEVELOPMENT OF THE STATE LEVEL PROGRAMS WHICH SERVE AS THE BASIC FRAMEWORK FOR THE CHESAPEAKE BAY RESTORATION AND PROTECTION EFFORT. WE HAVE TAKEN A LEAD IN ENACTING BOTH LEGISLATIVE AND BUDGETARY MEASURES TO SUPPORT THESE PROGRAMS. COMMISSION MEMBERS HAVE SUCCESSFULLY INTRODUCED LEGISLATION TO LIMIT THE USE OF ANTI-FOULING PAINTS CONTAINING TBT IN MARYLAND AND VIRGINIA ,TO REVIEW THE

EFFECTIVENESS OF THE EROSION AND SEDIMENT CONTROL LAWS IN EACH OF OUR STATES, AND TO BEGIN TO DEVELOP NUTRIENT CONTROL STRATEGIES FOR THE BAY WATERSHED. WE HAVE ALSO TAKEN IMPORTANT STEPS IN PROVIDING FOR THE WISE MANAGEMENT OF THE LANDS ADJOINING THE BAY THROUGH THE PASSAGE OF THE CRITICAL AREA ACT IN MARYLAND AND THE CHESAPEAKE BAY PRESERVATION ACT IN VIRGINIA. TO DATE, OUR MEMBER STATES HAVE APPROPRIATED AND COMMITTED WELL OVER \$300 MILLION IN STATE FUNDS FOR THESE EFFORTS. WE ARE PROUD OF THE STEPS WHICH WE HAVE TAKEN AND WE LOOK FORWARD TO CONTINUING OUR LEADERSHIP ROLE AT THE STATE LEVEL, BUT WE ALSO RECOGNIZE THE ONGOING NEED FOR A STRONG FEDERAL PRESENCE IF OUR EFFORTS ARE TO ULTIMATELY SUCCEED. THE SIGNING OF THE CHESAPEAKE BAY AGREEMENT LAST DECEMBER SIGNALLED A HIGHWATER MARK IN THE LEVEL OF INTERJURISDICTIONAL AND INTER-DISCIPLINARY COOPERATION IN EFFORTS TO PROTECT AND PRESERVE THE CHESAPEAKE BAY. WE --ALL OF US, THE STATES, THE DISTRICT AND THE FEDERAL GOVERNMENT--NOW HAVE SPECIFIC COMMITMENTS AND DEFINED TIMETABLES FOR MEETING THOSE COMMITMENTS. AS THE ONLY SIGNATORY TO THAT AGREEMENT WHICH TRANSCENDS STATE BOUNDARIES, THE CHESAPEAKE BAY COMMISSION IS DEDICATED TO ENSURING ITS EFFECTIVE IMPLEMENTATION THROUGHOUT THE WATERSHED.

LAST SEPTEMBER, THE CHESAPEAKE BAY COMMISSION DEVELOPED AND PRESENTED TO OUR CONGRESSIONAL DELEGATIONS A PROPOSED CONGRESSIONAL AGENDA FOR THE CHESAPEAKE BAY WHICH, IN OUR OPINION, ADDRESSED THE CONTINUING NEED FOR A STRONG FEDERAL PRESENCE IN THE CHESAPEAKE BAY RESTORATION AND PROTECTION EFFORT. THE COMMISSION'S REPORT, WHICH I AM SUBMITTING FOR THE RECORD THIS MORNING, INCLUDES BOTH A GENERAL DISCUSSION OF PERTINENT ISSUES AND SPECIFIC RECOMMENDATIONS FOR CONSIDERATION BY THE CONGRESS. THE REPORT IS COMPRISED OF TWO SECTIONS--A FAIRLY BRIEF SUMMARY WHICH INCLUDES THE PRINCIPAL RECOMMENDATIONS OF THE COMMISSION, AND A LONGER APPENDIX WHICH PROVIDES ADDITIONAL BACKGROUND INFORMATION ON THE EXISTING AND PROPOSED STATUTES AND PROGRAMS

WHICH DEFINE THE FEDERAL ROLE IN THE BAY CLEAN-UP PROGRAM. BOTH THE SUMMARY REPORT AND THE APPENDIX FOLLOW AN OUTLINE OF TOPICS WHICH THE COMMISSION HAS USED TO DEVELOP ITS OWN LEGISLATIVE AGENDA FOR ACTIONS BY OUR THREE GENERAL ASSEMBLIES. MOST OF THE RECOMMENDATIONS WHICH THE COMMISSION OFFERED A YEAR AGO REMAIN VALID AND APPROPRIATE TODAY.

WE HAVE ADDRESSED A FULL ARRAY OF ISSUES RANGING FROM FISHERIES MANAGEMENT AND NUTRIENT CONTROLS TO TOXIC SUBSTANCES AND LAND USE TRENDS. WE HAVE LOOKED AT NEW PROGRAMS AND OLD PROGRAMS AND NOT-YET-DEVELOPED PROGRAMS IN AN ATTEMPT TO BEGIN TO SUGGEST AN APPROPRIATE LONG-TERM CONGRESSIONAL AGENDA FOR THE CHESAPEAKE BAY. WE HOPE THAT YOU WILL FIND THE REPORT USEFUL AS YOU CONSIDER SOME OF THESE ISSUES OVER THE NEXT SEVERAL YEARS. I WOULD LIKE TO BRIEFLY HIGHLIGHT FOR YOU SOME OF THE RECOMMENDATIONS INCLUDED IN THE REPORT WHICH WE CONSIDER TO BE PARTICULARLY SIGNIFICANT BOTH IN TERMS OF THEIR POTENTIAL IMPACTS AND IN THEIR URGENCY.

FIRST OF ALL, WE WOULD LIKE TO AGAIN COMMEND THE CONGRESS FOR ITS RECOGNITION OF THE CHESAPEAKE BAY PROGRAM IN THE REAUTHORIZATION OF THE CLEAN WATER ACT WHICH WAS ADOPTED IN FEBRUARY OF LAST YEAR AS THE WATER QUALITY ACT OF 1987. THE ACT ALSO FOR THE FIRST TIME SQUARELY ADDRESSES THE ISSUE OF NONPOINT SOURCE POLLUTION AS A FUNDAMENTAL ELEMENT IN OUR NATIONAL POLICY FOR WATER POLLUTION CONTROL. THE NEW NONPOINT SOURCE PROVISIONS OF THE ACT ARE CLEARLY INTENDED TO ASSIST THE STATES IN DEVELOPING AND IMPLEMENTING A HIGHLY INTEGRATED, UNIFIED, AND HOLISTIC APPROACH TO THE RESTORATION AND PROTECTION OF WATER QUALITY. THIS FAR-SIGHTED PROGRAM OFFERS THE STATES AN OPPORTUNITY TO AUGMENT THEIR AGRICULTURAL COST-SHARE PROGRAMS AND OTHER ONGOING NONPOINT SOURCE CONTROL EFFORTS BY INCORPORATING THESE PROGRAMS INTO A MORE COMPREHENSIVE AND BROAD-BASED MANAGEMENT STRATEGY FOR THE REDUCTION AND CONTROL OF NONPOINT SOURCE POLLUTION OF BOTH GROUNDWATER AND SURFACE WATER RESOURCES.

THIS PROGRAM COULD BE PARTICULARLY SIGNIFICANT IN THE BAY WATERSHED WHERE ONE-THIRD OF THE PHOSPHORUS AND TWO-THIRDS OF THE NITROGEN ENTERING OUR WATERWAYS EMANATE FROM NONPOINT SOURCES. TO DATE, HOWEVER, NO FUNDS HAVE BEEN APPROPRIATED FOR THE IMPLEMENTATION OF THIS VITAL COMPONENT OF THE PROGRAM. THE COMMISSION RECOMMENDS THAT THE CONGRESS, IN ORDER TO DEMONSTRATE THE STRENGTH OF ITS COMMITMENT TO THE REDUCTION OF NONPOINT SOURCE POLLUTION, APPROPRIATE THE FULL \$100 MILLION AUTHORIZED FOR THIS PROGRAM AND ALL OTHER PROVISIONS OF THE WATER QUALITY ACT OF 1987.

WE ALSO APPLAUD THE STRONG CONSERVATION PROVISIONS WHICH WERE INCLUDED IN THE 1985 FARM BILL. THEY REPRESENT THE MOST SIGNIFICANT CHANGES TO HAVE OCCURRED IN NATIONAL SOIL CONSERVATION POLICY IN THE PAST 50 YEARS, LINKING SPECIFIC CONSERVATION PLANS AND PRACTICES TO THE ELIGIBILITY REQUIREMENTS FOR FEDERAL CROP PRODUCTION AND FARM PROGRAM SUBSIDIES. THE FULL IMPLEMENTATION OF THESE NEW PROVISIONS, HOWEVER, WILL CREATE A SUBSTANTIAL NEW WORKLOAD FOR THE SOIL CONSERVATION SERVICE, THE ASCS, AND LOCAL CONSERVATION DISTRICTS IN AN ERA OF STEADILY DECLINING FEDERAL SUPPORT FOR CONSERVATION ACTIVITIES IN GENERAL. THESE NEWLY-ENACTED CONSERVATION INITIATIVES MUST BE UTILIZED TO SUPPLEMENT--NOT TO SUPPLANT--EXISTING SOIL CONSERVATION AND POLLUTION CONTROL PROGRAMS. THE CHESAPEAKE BAY COMMISSION URGES THAT ADEQUATE FUNDING BE PROVIDED FOR THE SOIL AND WATER CONSERVATION PROGRAMS OF SCS AND ASCS, INCLUDING BOTH BASE PROGRAM ACTIVITIES AND THOSE NEW ACTIVITIES RELATED SPECIFICALLY TO THE IMPLEMENTATION OF THE CONSERVATION PROVISIONS OF THE FOOD SECURITY ACT OF 1985.

THE COMMISSION HAS BEEN PARTICULARLY CONCERNED ABOUT THE EXTREMELY LOW PARTICIPATION OF BAY AREA FARMERS IN THE CONSERVATION RESERVE PROGRAM WHICH IS DESIGNED TO REMOVE HIGHLY ERODIBLE LANDS FROM PRODUCTION FOR A PERIOD OF AT LEAST TEN YEARS. THIS PROGRAM IS POTENTIALLY ONE OF THE MOST IMPORTANT LAND

MANAGEMENT TOOLS AVAILABLE TO ASSIST THE STATES IN THEIR EFFORTS TO REDUCE SEDIMENT AND NUTRIENT LOADS TO THE CHESAPEAKE BAY SINCE CRP-ELIGIBLE LANDS ACCOUNT FOR FULLY 75% OF THE ANNUAL EROSION WITHIN THE WATERSHED. FARMERS IN THE BAY REGION, HOWEVER, HAVE ENROLLED THEIR LANDS IN THIS PROGRAM AT A RATE FAR BELOW THE NATIONAL AVERAGE. THE COMMISSION HAS BEGUN TO INVESTIGATE SOME OF THE REASONS FOR THIS LOW PARTICIPATION RATE, AND THEY APPEAR TO BE PRIMARILY, BUT NOT ENTIRELY, ECONOMIC IN ORIGIN. THE SENATORS FROM THE BAY STATES HAVE RAISED THESE CONCERNS IN A LETTER TO THE SECRETARY OF AGRICULTURE BUT WE FEEL THAT ADDITIONAL ACTIONS ARE WARRANTED. WE HAVE SUGGESTED THAT BOTH THE STATES AND THE FEDERAL GOVERNMENT PURSUE ALL POSSIBLE ADMINISTRATIVE AND LEGISLATIVE STRATEGIES TO ENHANCE REGIONAL PARTICIPATION IN THE CONSERVATION RESERVE PROGRAM. A NUMBER OF SPECIFIC POLICY ALTERNATIVES WHICH WE FEEL SHOULD BE CONSIDERED ARE DESCRIBED IN THE COMMISSION'S REPORT. BOTH MARYLAND AND VIRGINIA HAVE ADOPTED PROGRAMS AND COMMITTED RESOURCES AT THE STATE LEVEL WHICH ARE DESIGNED TO ENHANCE REGIONAL PARTICIPATION IN THIS IMPORTANT PROGRAM.

THE PRODUCTIVITY AND RESPONSIBLE MANAGEMENT OF THE LIVING RESOURCES IN THE BAY SYSTEM HAVE BEEN PRIORITY CONCERNS OF THE CHESAPEAKE BAY COMMISSION SINCE ITS INCEPTION. THE NEW 1987 CHESAPEAKE BAY AGREEMENT HAS MARKED THE PRODUCTIVITY OF THE LIVING RESOURCES WITHIN THE BAY SYSTEM AS THE SINGLE MOST IMPORTANT CRITERION AGAINST WHICH THE SUCCESS OF OUR RESTORATION EFFORTS MUST BE MEASURED. THE AGREEMENT CALLS UPON THE STATES TO BEGIN THE PROCESS OF DEVELOPING BAYWIDE FISHERY MANAGEMENT PLANS FOR ALL MAJOR SPECIES. IN ORDER TO DEVELOP SUCH PLANS IN A REASONABLE AND BIOLOGICALLY-SOUND MANNER, A THOROUGH KNOWLEDGE OF THE CONDITION OF MAJOR FISHERIES STOCKS WILL BE ABSOLUTELY ESSENTIAL. THE CHESAPEAKE BAY STOCK ASSESSMENT COMMITTEE WITHIN THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION HAS INITIATED THE FIRST

COMPREHENSIVE ATTEMPT TO ASSESS THE STATUS OF IMPORTANT FISHERIES STOCKS ON A BAYWIDE BASIS. THIS EFFORT HAS BEEN CARRIED OUT UNDER AN APPROPRIATION WHICH HAS BEEN MADE ANNUALLY SINCE FISCAL YEAR 1985 TO NOAA FOR ITS CHESAPEAKE BAY ACTIVITIES , BUT THERE IS CURRENTLY NO LEGISLATIVE MANDATE OR LONG-TERM AUTHORIZATION FOR THIS PROJECT. THE COMMISSION FAVORS ENACTMENT OF LEGISLATION WHICH WOULD PROVIDE A CLEAR CHARGE TO NOAA TO CONDUCT, COOPERATIVELY WITH THE STATES, BAYWIDE STOCK ASSESSMENTS OF COMMERCIAL AND RECREATIONALLY IMPORTANT FISHERIES AND WHICH WOULD INCLUDE A THREE TO FIVE YEAR AUTHORIZATION FOR THE EFFORT.

ONE FISHERIES-RELATED CONCERN WHICH OUR COMMISSION VIEWS WITH SOME URGENCY IS THE MSX DISEASE WHICH HAS DEVASTATED THE OYSTER INDUSTRY IN MARYLAND AND VIRGINIA OVER THE PAST TWO YEARS. THE BAY STATES SHOULD REQUEST AND RECEIVE ADDITIONAL FEDERAL DISASTER ASSISTANCE TO ADDRESS THE NEAR-TERM PROBLEMS RELATED TO THIS DISEASE. IT IS ALSO TIME THAT A COMPREHENSIVE AND CONCERTED RESEARCH PROGRAM BE MOUNTED TO DISCOVER THE MEANS TO CONTROL MSX AND OTHER SERIOUS SHELLFISH DISEASES. SUCH A PROGRAM SHOULD BE A COOPERATIVE FEDERAL-STATE EFFORT EMPLOYING THE VERY BEST RESOURCES AND RESEARCH FACILITIES AT OUR DISPOSAL. REPRESENTATIVE DYSON OF MARYLAND HAS INTRODUCED LEGISLATION TO ADDRESS THIS NEED AND THE COMMISSION HAS FULLY SUPPORTED THAT EFFORT. IT IS VITAL THAT THIS RESEARCH EFFORT BE INITIATED AS EXPEDITIOUSLY AS POSSIBLE, FOR NO LESSER RESOURCE THAN THE ENTIRE EAST COAST OYSTER INDUSTRY MAY BE AT STAKE HERE.

THE CHESAPEAKE BAY AGREEMENT ALSO COMMITS THE STATES TO ACHIEVING BY THE YEAR 2000 A 40% REDUCTION IN THE TOTAL LOAD OF NUTRIENTS, NITROGEN AS WELL AS PHOSPHORUS, ENTERING THE BAY ANNUALLY. CLEARLY, SUCH A GOAL WILL REQUIRE MAJOR NEW EFFORTS TO REDUCE BOTH POINT AND NONPOINT SOURCES OF NUTRIENTS. IN THE AREA OF POINT SOURCES, PRIMARILY SEWAGE TREATMENT PLANTS, THIS WILL

REQUIRE A MAJOR SHIFT IN POLICY TO INCLUDE NITROGEN LOAD REDUCTIONS AT A NUMBER OF SITES THROUGHOUT THE BAY REGION. IN ORDER TO ACHIEVE OUR YEAR 2000 GOALS, ADVANCED WASTEWATER TREATMENT, INCLUDING NITROGEN REMOVAL, IS LIKELY TO BE REQUIRED ON A LARGE SCALE AT PLANTS IN THE BAY WATERSHED. CURRENT EPA POLICY, MANDATED BY THE CONGRESS, SEVERELY RESTRICTS THE USE OF FEDERAL FUNDING FOR NITROGEN REMOVAL TECHNOLOGY. WE BELIEVE THAT THE TIME HAS COME FOR CONGRESS TO REVISIT THIS POLICY.

NUTRIENT PROBLEMS ARE SURE TO BECOME APPARENT IN OTHER AREAS OF THE COUNTRY AS INCREASING NUMBERS OF EAST COAST ESTUARIES COME UNDER CLOSE SCRUTINY, AND THE CHESAPEAKE BAY CAN SERVE AS THE PROVING GROUND FOR IMPLEMENTING AND REVIEWING THE EFFECTIVENESS OF VARIOUS NITROGEN REMOVAL TECHNOLOGIES. THE CHESAPEAKE BAY PROGRAM, WITH ITS EXISTING INTERJURISDICTIONAL NETWORK AND ONGOING RESEARCH PROJECTS, REPRESENTS A MODEL FOR ESTUARINE PROGRAMS ON A NATIONWIDE BASIS. THE CHESAPEAKE BAY COMMISSION SUGGESTS THAT THE FEDERAL GOVERNMENT SHOULD USE THIS UNIQUE OPPORTUNITY TO CONDUCT A LARGE-SCALE DEMONSTRATION PROGRAM FOR THE REMOVAL OF NUTRIENTS FROM WASTEWATER USING THE ENTIRE BAY AS A LIVING LABORATORY. CURRENTLY, EPA IS PARTICIPATING IN ONLY TWO SMALL-SCALE BIOLOGICAL NUTRIENT REMOVAL DEMONSTRATION PROJECTS IN THE CHESAPEAKE BAY WATERSHED, BOTH OF WHICH INVOLVE THE RETROFITTING OF EXISTING WASTEWATER TREATMENT FACILITIES. WE BELIEVE THAT THIS EFFORT OUGHT TO BE EXPANDED TO INCLUDE A VARIETY OF ALTERNATIVE TECHNOLOGIES AT LARGE AS WELL AS SMALL TREATMENT PLANTS.

AS YOU PROBABLY KNOW, THE BAY AGREEMENT CALLS FOR A RE-EVALUATION OF OUR BASIN-WIDE NUTRIENT REDUCTION STRATEGY IN 1991. THIS RE-EVALUATION WILL RELY HEAVILY ON THE CAPABILITIES OF THE THREE-DIMENSIONAL MODEL BEING DEVELOPED

COOPERATIVELY BY THE EPA AND THE U.S. ARMY CORPS OF ENGINEERS. WE STRONGLY URGE THE CONGRESS TO ENSURE THAT THE DEVELOPMENT OF THIS PREDICTIVE MODEL IS GIVEN PRIORITY ATTENTION SO THAT IT IS COMPLETED IN A TIMELY FASHION.

I HAVE MENTIONED ONLY A FEW OF THE ISSUES WHICH THE CHESAPEAKE BAY COMMISSION HAS ADDRESSED IN ITS "PROPOSED CONGRESSIONAL AGENDA". WE HAVE ALSO CALLED FOR A STRENGTHENING OF EXISTING PROGRAMS AND STATUTES TO DEAL WITH TOXIC SUBSTANCES AND FOR A CLOSER EXAMINATION OF THE INTERACTIONS BETWEEN AIR AND WATER QUALITY. INTERJURISDICTIONAL AND INTER-AGENCY RELATIONSHIPS AND RESPONSIBILITIES IN THE GENERAL AREA OF TIDAL AND NONTIDAL WETLANDS PROTECTION MUST ALSO BE REVIEWED. WE HOPE THAT THE CONGRESS WILL PERIODICALLY HOLD HEARINGS SUCH AS THIS ONE TODAY TO ENSURE THAT ALL OF THE APPROPRIATE PROGRAMS AND POLICIES ARE BEING EFFECTIVELY IMPLEMENTED AND COORDINATED AT ALL LEVELS AND THAT WE ARE MAKING ADEQUATE PROGRESS IN OUR ENDEAVORS. THE FEDERAL-STATE-LOCAL PARTNERSHIP IN THE CHESAPEAKE BAY RESTORATION EFFORT HAS THUS FAR BEEN A GOOD AND PRODUCTIVE ONE. FOR ITS PART, THE CHESAPEAKE BAY COMMISSION INTENDS TO ENSURE THAT IT REMAINS SO AND WE TRUST THAT CONGRESS WILL DO THE SAME. AGAIN, WE LOOK FORWARD TO WORKING WITH YOU IN THE FUTURE IN PURSUIT OF OUR MUTUAL GOAL, A CLEANER, HEALTHIER AND MORE PRODUCTIVE CHESAPEAKE BAY FOR ALL OF OUR CITIZENS. I OFFER TO YOU AND TO YOUR STAFFS THE FULL COOPERATION AND ASSISTANCE OF OUR MEMBERS AND OUR STAFF IN FORGING AN EVEN STRONGER ALLIANCE BETWEEN OUR STATE AND FEDERAL LEGISLATORS TO ELEVATE THE CHESAPEAKE BAY RESTORATION AND PROTECTION PROGRAM TO THE NATIONAL STATUS WHICH IT TRULY DESERVES.

IN CLOSING, I THINK I CAN SAY THAT WE ARE ALL JUSTIFIABLY PROUD OF THE PROGRESS WHICH WE HAVE MADE IN A RELATIVELY SHORT PERIOD OF TIME. BUT WE CANNOT DELUDE OURSELVES BY THINKING THAT OUR TASKS HAVE BEEN COMPLETED OR OUR GOALS MET. THERE REMAINS MUCH TO BE DONE. WE KNOW THAT THE POPULATION IN THE

WATERSHED WILL INCREASE BY SOME 20% OVER THE NEXT THIRTY YEARS AND THAT THERE WILL BE INCREASED PRESSURES ON OUR LAND AND WATER RESOURCES AS A RESULT OF THAT GROWTH. WITHOUT SOUND GROWTH MANAGEMENT STRATEGIES AND BOLD AND INNOVATIVE WASTE REDUCTION PROGRAMS, THE GAINS WHICH WE HAVE ACHIEVED WILL EASILY BE ECLIPSED BY THE ADDITIONAL PRESSURES WHICH OUR PEOPLE WILL PLACE ON THE SYSTEM. WE KNOW THAT OUR TASK IS NOT AN EASY ONE AND WE DO NOT EXPECT OVERNIGHT SUCCESS. I BELIEVE THAT WE ARE ON THE RIGHT PATH AND THAT WE MUST REMAIN COMMITTED TO THIS PROGRAM OVER THE LONG TERM. CLEARLY, IT WILL REQUIRE OUR BEST EFFORTS AND ENERGIES BUT WE CONTINUE TO BE HEARTENED BY THE FACT THAT A CONCERNED, INFORMED AND INVOLVED PUBLIC HAS DEMANDED OF US CONTINUED COOPERATION, IMPROVED MANAGEMENT, AND, ULTIMATELY, SUCCESS IN REVERSING THE DOWNWARD TRENDS IN THE RESOURCES OF THE CHESAPEAKE BAY. NO JURISDICTION INVOLVED, AND NO ADMINISTRATOR OR LEGISLATOR—EITHER STATE OR FEDERAL—WANTS TO BE SEEN AS FAILING THAT CONSTITUENCY.

THANK YOU.

CHESAPEAKE BAY COMMISSION

A Proposed CONGRESSIONAL AGENDA FOR THE CHESAPEAKE BAY

SUMMARY

1987

The Chesapeake Bay Commission, which serves the General Assemblies of Pennsylvania, Maryland, and Virginia, has as one of its charges to "represent the common interests of the three states in the Chesapeake Bay as they are affected by the activities of the federal government and to monitor federal activities affecting the Bay." This document constitutes a partial fulfillment of that charge.

The Commission's principal focus, since its creation in 1980, has been to ensure that appropriate legislative and budgetary actions have been taken within each of our states to establish the necessary framework to actively pursue a Bay restoration effort. But, just as the Chesapeake Bay restoration effort was initially catalyzed through a federal effort, we recognize that federal leadership in the effort continues to be vital.

The study phase of the Chesapeake Bay Program determined that the major problems of the Bay were nutrient enrichment, toxic pollution and the loss of submerged aquatic vegetation. Since the completion of that study in 1983, the primary goal of the Chesapeake Bay community in terms of Congressional action has been the reauthorization of the Clean Water Act. That goal has now been accomplished, and, with it, a long term Chesapeake Bay Implementation Program has been established. We are very grateful to the Senators and Representatives from the Chesapeake Bay Region who helped to make that goal a reality.

Under the leadership of former Senator Charles "McC" Mathias, other agencies of the federal government were encouraged to take part in the Chesapeake Bay Program. This led to the development of a series of "Memoranda of Understanding" between the Environmental Protection Agency and the Soil Conservation Service, the National Oceanic and Atmospheric Administration, the Army Corps of Engineers, the Fish and Wildlife Service, and the U.S. Geological Survey. The Department of Defense also signed a Joint Resolution with EPA. Appropriations supporting the Chesapeake Bay activities of these agencies have become a vital part of the federal Chesapeake Bay restoration effort.

All of the state and federal participants in the Bay restoration effort have agreed that the easy and obvious actions have been taken. We are now examining the scope and breadth of previous commitments, to determine whether they are sufficient for the job, and are revitalizing those commitments in a proposed new Chesapeake Bay Agreement for 1987.

That proposed 1987 Agreement was released in Norfolk on August 6, 1987, and will be signed in December. During the interim period there will be a time of intense deliberation and discussion among the public and the participating governments to ensure that the final agreement, as signed, will be our very best effort. It will be an attempt to chart a course into the next century, although we recognize the need to review and revise such a document at least every four or five years. Each state will be examining its own laws and programs to determine where expansion and improvement are required to meet the goals and objectives of the proposed Agreement. It is, therefore, an appropriate time to also take a new look at the federal role.

Having achieved the major goal of national recognition of the Bay Program through the Water Quality Act of 1987, and with the incorporation of the other agencies into the Bay effort, the more obvious actions which Congress can take on behalf of the Bay have been accomplished. The Chesapeake Bay Commission believes that it is now time, as the states and the federal government are preparing to sign a new Agreement with firmer and more specific commitments to Bay restoration, to take stock of what the long term Congressional agenda for the Bay should be.

As we believe the following pages will make clear, much of what the federal government will need to do in order to meet its obligations under the proposed 1987 Chesapeake Bay Agreement will merely require the expeditious fulfillment of the terms of existing laws and continuation of appropriations now in place. But, just as we believe that oversight and review by the Chesapeake Bay Commission improves state Bay restoration programs, we believe that additional Congressional attention will continue to improve the federal Bay restoration effort. Goals set by Congress are not always easily achieved in practice, or may not be followed in all areas of the country with equal diligence. The Office of Technology Assessment, for example, has reported in *Wastes in the Marine Environment*, that the goals of the Clean Water Act are not being met in estuarine and marine waters, and pointed out several problems common to the Bay and other estuaries around the nation. The Conservation Reserve Program, on the other hand, has shown great success in retiring highly erodible land nationwide, but in the Bay region, where agricultural nonpoint source pollution problems are severe, this potentially significant program is highly ineffective. For such problems, constructive oversight will help. In other instances, problems troubling the Bay have not been addressed by existing legislation. Issues such as the impact of airborne pollutants on the Bay will require new appropriations and legislation.

We attempt in this document to take the first step in defining a new Congressional agenda for the Chesapeake Bay. The document is organized into a Summary of Issues and Recommendations, which follows, and a separate Appendix, which more fully catalogues the federal laws and programs which affect the Bay. Both the Summary Report and the Appendix follow an outline of topics which the Commission has used to express its own agenda for action by the General Assemblies:

- A. Fisheries and Living Resources Management
- B. Point Source Nutrient Control
- C. Agricultural and Forestry Nonpoint Sources of Pollution
- D. Erosion and Sediment Control and Stormwater Management
- E. Toxic Pollution
- F. Shoreline Erosion
- G. Water Use Activities
- H. Population Growth and Land Use Trends
- I. Institutional Arrangements

A. FISHERIES AND LIVING RESOURCES MANAGEMENT

Chesapeake Bay Commission Priorities

The Chesapeake Bay Commission is concerned with the restoration of species of fish and wildlife currently in decline, and in the revitalization of commercial fisheries and the provision of recreational fishing opportunities. The Commission believes that sound state fisheries management plans, based on common Baywide objectives and strategies, must be developed and implemented for all important commercial and sport fisheries. Basic information upon which to base such plans is often fragmentary, and continued efforts to improve understanding of the population dynamics of Bay species must be made a higher priority if management efforts are to succeed. Protection of habitat is also essential.

The Federal Role in Bay Fisheries Management

The federal role in fisheries management of the Bay's resources is primarily one of providing financial and technical assistance to the states. While the federal government is directly involved in managing offshore fisheries through the regional Fisheries Management Councils, within the inland waters of the states, including Chesapeake Bay, states are responsible for the direct management of fisheries. Even in the case of striped bass management, which is affected by the implementation of the Studds Act, the development of fisheries management plans is carried out by the states, acting jointly through the Atlantic States Marine Fisheries Commission, and implementation is carried out by each state individually. Federal action is limited to enforcing the interstate plan.

Federal assistance has been vital, however, to the states' efforts to manage their fisheries. Statistics

gathering and analysis, research concerning the factors that affect fisheries, the promotion of seafood products, and the direct management of offshore fisheries resources are all important ongoing federal activities. Without these programs, state management of fisheries within inland waters would be seriously curtailed.

Recommendations:

1. Funding under the Interjurisdictional Fisheries Act is of particular importance to the Bay states, especially in terms of maintaining fisheries statistics programs. Virginia receives approximately \$150,000 per year and Maryland receives about \$100,000 per year under this Act. In Virginia, four positions are funded through this Act, and the statistics program would cease to exist without this funding.

The Anadromous Fish Act and the Emergency Striped Bass Act provide financial and technical assistance for the assessment of stocks and determination of reasons for decline of these species, and full funding of these programs is highly desirable if the management of anadromous species is to continue to improve.

2. During FY 1986, Bay jurisdictions received \$2.5 million in disaster relief funding under the provisions of the Commercial Fisheries Research and Development Act, due to the catastrophic effects of MSX disease. These funds are being used to supplement state shell and seed planting programs. The Interjurisdictional Fisheries Act of 1986 continues authorization of restoration assistance where commercial fishery failures occur. During the summer of 1987, the MSX epidemic has dramatically worsened. **The Bay states ought to seek and receive additional federal disaster assistance to address MSX-related problems.**
3. MSX is not only a Chesapeake Bay problem, although this is the area where the present impact is greatest. In Virginia it is estimated that 65-70% of the oyster beds are affected; in much of Maryland's waters, mortalities may reach 90%. The disease has now been identified from Cape Cod to the Georgia border. While the disease has not, to date, been found in the Gulf of Mexico, the potential for spread to such areas is great. Little has been learned about the MSX disease. It has not been cultured in the laboratory, its means of transfer from one oyster to the next has not been discovered, and the genetic basis for disease resistance has not been explored. Research efforts have been piecemeal.

It is time that a concerted, comprehensive research program aimed at finding the means to control MSX and other devastating oyster disease is initiated. Such a program ought to be a cooperative federal-state effort. Ideally to the Bay states, such a program could be directed through the NMFS Oxford Lab, which is now run cooperatively by NMFS and the state of Maryland, and should involve both the University of Maryland and the Virginia Institute of Marine Science. The University of Delaware, Rutgers, and other institutions might also be involved. An alternative would be more funding for this problem with Aquaculture Act funds through the National East Aquaculture Research Center. But however organized and funded, it is vital that the federal government does initiate such a program, aimed at saving the oyster industry along the entire east coast of the United States.

4. More than \$12.5 million in aquaculture research funding is being provided annually under the National Aquaculture Act of 1980. Much of this funding now supports the catfish farming industry. **Congressional representatives from the Bay states should insist that substantial portions of Aquaculture Act appropriations be earmarked for the development of shellfish aquaculture in the eastern United States.**
5. Since Fiscal Year 1985, \$1.5 million has been provided annually to NOAA for its Chesapeake Bay activities. Much of this appropriation is used for the Chesapeake Bay Stock Assessment Program, administered by the Chesapeake Bay Stock Assessment Committee. This program marks the first attempt to assess the condition of major species on a Baywide basis, an activity which is vital if Baywide management strategies are to be developed. It is also vital in efforts to restore the living resources of the Bay, because the interrelationships among climate, harvest, and pollution in the decline of important species are not yet clearly understood. As with the EPA Bay Program, the presence of the federal agency and the availability of federal funding act as catalysts to spur state action, and provide leverage to obtain additional state funds. Currently no long-term authorization for this effort exists.

The Commission favors enactment of legislation which would (1) provide a clear charge to NOAA to conduct, cooperatively with the States, Baywide stock assessments of commercially and recreationally important species of fish, (2) include a three to five year authorization for the stock assessment effort, and (3) require a report to Congress at the end of the authorization period concerning the status of stocks, design of Baywide efforts for continuous monitoring of the status of stocks, and efforts to implement Baywide fisheries management strategies for important species.

6. Congress is to be applauded for recognizing the need to enhance the role of fish and wildlife agencies in the process of licensing hydroelectric projects, and facilitating that involvement through enactment of the Electric Consumer Protection Act of 1986. Oversight will be required to ensure that the Act's intent is carried out in the numerous licensing decisions on anadromous fish spawning streams in the Chesapeake Bay region. **Congress should request the U.S. Fish and Wildlife Service to report on efforts to improve fish passageways for anadromous fish in the Bay region, and the role of FERC in assisting this effort through mitigation requirements in hydroelectric facility licenses.**
7. The resolution of mitigation measures in the FERC license for Conowingo Dam has been a long and arduous exercise. **Congress should continue to urge FERC to move expeditiously to adopt a final order for water quality, low flow and fish restoration conditions in the Conowingo license, and to see that implementation of the order is carried out in a timely fashion.**
8. In 1988, the authorization for the Atlantic Striped Bass Conservation Act will expire. In fact, the last report on the implementation and enforcement of the Interstate Plan required by the Act is to occur in December of 1987. While the Commission does not generally favor federal intervention in state fisheries management activities, it has supported the Studds Act as a necessary emergency measure. Implementation of the plan by all states has apparently had an extremely beneficial effect on the current stock of the species, and has raised hope for improved reproductive success in the near future. There is no evidence so far, however, that reproduction has improved in the critical Upper Bay spawning areas, although some improvement is apparent in Virginia and in the Potomac River. When juvenile indices return to levels near the long-term average, continued management will be needed to control the reopening of fisheries and to prevent overfishing in the future. **Reauthorization of the Studds Act is a high priority in 1988.**

B. POINT SOURCE NUTRIENT CONTROL

Chesapeake Bay Commission Priorities

The Chesapeake Bay Commission supports the proposed 1987 draft Chesapeake Bay Agreement commitment to a 40% reduction in the total load of nutrients, both nitrogen and phosphorus, entering the Bay annually and for the achievement of this goal by the year 2000. While this load reduction has not yet been allocated among the tributary systems to the Bay, or between point and nonpoint sources, it is clear that it will require major new efforts to reduce both point and nonpoint sources.

The Chesapeake Bay states have been implementing point and nonpoint source control programs aimed at reducing the total nutrient load to the Bay since the Chesapeake Bay Restoration and Protection effort began, but have not previously attempted to quantify the load reductions. Also, past efforts have focused largely on phosphorus control, which is easier and cheaper to implement in both point and nonpoint source control programs. The proposed 1987 Agreement will require a major shift in emphasis, particularly in point source programs, to include nitrogen load reductions.

The Federal Role in Point Source Nutrient Control

The federal role in point source nutrient control has been primarily one of financial assistance. Sewage treatment plants are the principal point sources of nutrients, and the Clean Water Act provides the chief source of construction funding. The federal government, however, has rarely funded nutrient controls, except for phosphorus removal in the upper Bay region.

Recommendations:

1. The job of reducing the amount of nutrients in point source discharges by 40%, or by some greater amount, is largely a matter of funding. It is technologically feasible to reduce the point source load of phosphorus by about 98%, and the nitrogen load by about 80%. Such treatment involves additional capital funding for construction, added operating and maintenance expense, increased quantities of

sludge which must be disposed of, and a higher level of technical skill on the part of the plant operators than does conventional treatment. The cost of applying this level of treatment Baywide could run several billions of dollars in excess of the amount currently projected to meet the National Municipal Policy, which requires all municipal sewage treatment works to be in compliance with their existing permit limits by 1988. While new technologies such as biological nutrient removal promise a relatively low cost means of removing nutrients at some plants, it is likely that many plants will require costly upgrades. These costs will be added to the already staggering estimates of sewage construction needs at a time when federal assistance for such construction under the Water Quality Act of 1987 is waning.

The needs of the Chesapeake Bay states are somewhat unique with respect to sewage treatment plant construction in that advanced treatment, including nitrogen removal, is likely to be required on a large scale. The Chesapeake Bay region is unlikely to remain unique in this respect, however. As increasing numbers of east coast estuaries come under close scrutiny, additional nutrient problems will be identified. The Bay will serve as the proving ground for implementing nitrogen removal, through a variety of removal technologies. **The federal government should use this opportunity to conduct a large-scale demonstration program for the removal of nutrients. Currently, EPA is participating only in two small-scale biological nutrient removal demonstration projects. We believe that this effort ought to be expanded to demonstrate a variety of technologies at large as well as small plants.**

2. At the current time, while construction grant funds remain available, the Advanced Treatment Policy serves as a barrier to the implementation of nutrient removal at sewage treatment plants. Lack of EPA approval of construction grant funding for nutrient removal has two detrimental effects. First, it makes the project considerably more difficult to fund, since the state or local government must pay 100% of the costs. Secondly, lack of EPA approval denies state water quality managers the "backing" they need to prod local governments into complying with state requirements. If EPA claims that expensive nutrient removal processes are unnecessary, it is difficult for the state to claim that they are needed and warrant the additional expense.

Pursuant to the new Chesapeake Bay Agreement, EPA and the states should develop a new Chesapeake Bay Nitrogen and Phosphorus Policy, which spells out how construction grants and revolving loan funds may be used for advanced treatment in the Bay. **Such a policy should be adopted by EPA no later than the completion of the nutrient reduction plan cited in the new Agreement; i.e., no later than July 1, 1988. Construction grants and loan funds for projects consistent with this policy should be specifically exempted from the advanced treatment policy by regulation.**

C. AGRICULTURAL AND FORESTRY NONPOINT SOURCES OF POLLUTION

Chesapeake Bay Commission Priorities

Excessive nutrient enrichment has been conclusively identified as a major contributing factor to the declining water quality and productivity of the Chesapeake Bay ecosystem. A significant proportion of the nutrient load entering the Bay and its tributaries arises from nonpoint sources of pollution, principally in the form of runoff from agricultural lands. As point source control technology approaches its technical and economic limits, it has been increasingly recognized that the implementation of nonpoint source control programs, particularly in the agricultural area, must be accelerated if the water quality benefits intended by the major investments in point source controls are to be more fully realized.

The Chesapeake Bay Commission is convinced that any successful attempt to improve the water quality of the Chesapeake Bay must include a strong, and even dominant, nonpoint source control component. The Commission's concerns include not only the runoff of soils, nutrients and chemicals from farmlands, but also the impacts of chemical application and other agricultural practices on groundwater supplies. Successful efforts in this regard will require maintenance and enhancement of the existing federal-state partnership to promote the utilization of best management practices on agricultural lands, increased participation by Bay area farmers in new federal programs, and, in some cases, a re-orientation of existing soil conservation programs to ensure that water quality considerations are adequately addressed.

The Federal Role in Agricultural Nonpoint Source Pollution Control

Nonpoint source pollution reduction *per se* has not traditionally been a major focus of federal water

pollution control efforts. Federally-supported programs administered through the U.S. Department of Agriculture have long provided financial and technical assistance to combat cropland erosion and runoff, but the principal goal of these programs has been the conservation of valuable topsoil in order to enhance agricultural productivity. A significant incidental benefit of these policies has been improved water quality through a reduction in the level of sediments and associated nutrients transported from farmlands to waterways. Important linkages between conservation on the land and improvements in water quality have been established and substantiated over the past several years, and the agricultural community has become an integral part of the Bay restoration and protection effort.

While these important conservation programs are continuing, two recent Congressional actions have served to redirect federal attention toward nonpoint source pollution control in a more specific way, and have opened new avenues to broaden and modify the traditional approaches to nonpoint source pollution control. These are the Food Security Act of 1985 and the Water Quality Act of 1987.

Recommendations

1. The conservation provisions of the Food Security Act represent the most significant changes in national soil conservation policy in the past 50 years, linking, for the first time, specific conservation plans and practices to the eligibility requirements for the receipt of federal crop production and farm program subsidies. Beginning in 1990, individuals farming on highly erodible lands must have an approved conservation plan for their entire farm in order to remain eligible for federal benefits and supports. The development and implementation of these plans will require significant increases in financial and technical assistance.

The Chesapeake Bay Commission applauds the recent initiatives enacted by the Congress, but these actions are clearly intended to supplement, rather than supplant, existing soil conservation and pollution control programs. The full implementation of the conservation provisions of the Farm Bill will create a substantial new workload for the Soil Conservation Service, the Agricultural Stabilization and Conservation Service and local conservation districts. While state and local governments have increased funding for soil and water conservation activities over the past few years, their conservation program commitments have also grown and funding and manpower needs are rapidly outstripping the state and local resources available for the task. Federal support for conservation programs in general has been declining steadily in recent years. While states must be prepared to increasingly share the burden of responsibility for financing these efforts, additional federal support and a sustained federal commitment will also be absolutely essential to the success of these programs. **The Chesapeake Bay Commission recommends that adequate funding be provided for the soil and water conservation programs of SCS and ASCS, including both base program activities and those new activities related specifically to the implementation of the conservation compliance provisions of the Food Security Act of 1985. Available resources should be targeted to lands which significantly impact water quality.**

2. The Conservation Reserve Program (CRP), designed to remove highly erodible lands from production for a period of ten years, is potentially one of the most important land management programs available to aid the states in their efforts to reduce sediment and nutrient loads to the Chesapeake Bay since CRP-eligible lands account for fully 75% of the annual erosion within the watershed. Unfortunately, this potential remains largely unrealized at this point because of low participation in the program by area farmers. As a result, the states have lost, and will continue to lose, major federal resources for soil conservation and could consequently forgo a major opportunity to achieve significant water quality benefits for the Chesapeake Bay. This situation must not be allowed to continue. **Administrative and legislative strategies to enhance regional participation in the Conservation Reserve Program must be pursued by both the states and the federal government.**

Under the provisions of the Farm Bill and the implementing regulations for the CRP, the Secretary of Agriculture is granted a great deal of discretion in implementing the provisions of the Act. **The Chesapeake Bay Commission recommends that this discretionary authority be exercised in order to ensure more equitable participation in the Program on a nationwide basis without jeopardizing the essential conservation purposes of CRP.** Specifically, it is recommended that the following policy alternatives be considered:

- adoption of a geographic allocation or allotment system based on the distribution of highly

erodible lands

- revision of the bid selection criteria and process
- implementation of Program provisions related to the eligibility of lands which pose an off-farm environmental threat
- relaxation of the prohibitions of economic use of enrolled lands

The Commission also supports, in concept, legislation to expand the amount of acreage targeted for inclusion in the CRP and to strengthen the water quality focus of the Program.

3. The Water Quality Act of 1987 amends the Clean Water Act to specifically incorporate nonpoint source pollution control programs into the nation's fundamental water pollution control policy. The Act authorizes \$400 million for grants to the states to be used for nonpoint source control and groundwater protection programs over the next four years. Obviously, agricultural programs will be a key element in any comprehensive strategy to reduce nonpoint source pollution. It is clear that Congress, in passing this measure, intends that states should develop and implement a highly integrated, unified, and holistic approach to the restoration and protection of water quality. In order to demonstrate the strength of its commitment to the reduction of nonpoint source pollution, the Congress should make every effort to appropriate the full amount of authorized funding.
4. In order to ensure that water quality considerations are incorporated into all soil conservation activities and programs, the existing Memorandum of Understanding between the Soil Conservation Service and the Environmental Protection Agency should be expanded to include other soil conservation efforts within the U.S. Department of Agriculture, particularly those administered through ASCS and the Forest Service.

D. EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT

Chesapeake Bay Commission Priorities

The erosion of sediment and the runoff from impervious surfaces following storm events are natural processes which frequently accompany land development. As nonpoint sources of pollution, sediment and stormwater runoff are important in at least two respects since the sediment particles themselves act as pollutants and both sediment and stormwater act as carriers of pollutants such as nutrients and toxic compounds. The Chesapeake Bay Commission is concerned that existing erosion control and stormwater management programs be adequately enforced, and that these programs be considered a major element of the developing state nonpoint source management programs in order to minimize the volume of sediment and stormwater runoff reaching the waters of the Chesapeake Bay and its tributaries.

The Federal Role in Erosion Control and Stormwater Management

Erosion control and stormwater management are essentially state-regulated programs with little or no direct federal involvement except in the area of floodplain management and emergency disaster relief. The Water Quality Act of 1987, while not specifically addressing sediment as a pollutant, does generically address the class of pollutants emanating from nonpoint sources. Within the context of that Act, erosion-generated sediment clearly qualifies as a category of pollutant which should be addressed under the states' nonpoint source assessment report and management program.

Stormwater management planning and control should also be enhanced under the new nonpoint source provisions of the Water Quality Act. In addition, the Act establishes new procedures for the regulation of some major municipal and industrial stormwater dischargers by adopting a phased and tiered approach to the permitting requirements for these sources.

Recommendations

1. Efforts to control urban nonpoint sources of pollution such as sediment and stormwater runoff will receive increased attention as a result of the Water Quality Act of 1987. The nonpoint source provisions of the Act should be adequately funded to ensure that new and existing urban programs are fully and effectively integrated into comprehensive nonpoint source water pollution control programs in each state.
2. Erosion and sediment control practices and stormwater management structures on government-

owned properties and government-regulated construction projects should serve as exemplary models of urban best management practices.

3. Many of the most severe stormwater problems in the region occur in older urban areas where effective management will require expensive retrofitting to exist stormwater management structures or the use of innovative technology. Assistance should be provided to affected municipalities for the development of plans to meet the stormwater management requirements of the Water Quality Act.

E. TOXIC POLLUTANTS

Chesapeake Bay Commission Priorities

The Commission supports the development of a comprehensive strategy for preventing toxic materials from entering the Bay or accumulating in the Bay in quantities or in concentrations which cause adverse impacts to living resources, prevent the harvest of fish and shellfish, or threaten human health. This requires the adoption of biomonitoring and toxic reduction strategies at point sources of discharge, continued implementation of pretreatment programs, a comprehensive system of product and use controls, safe disposal of hazardous materials, and timely adoption and enforcement of water quality standards. Recent findings on the input of toxic pollutants from atmospheric sources emphasize the need for cross-media control, and particularly for new initiatives to control acid precipitation. The proposed 1987 Chesapeake Bay Agreement calls for a toxic reduction plan to be developed by July 1988.

The Federal Role in Toxic Pollution Control

Nearly all state management programs aimed at reducing toxic inputs to the Bay are carried out through delegation of federal authority to the states, and with substantial federal funding and technical assistance. In addition, several federal agencies have been specifically charged to conduct studies on the effects of toxic materials on the marine environment, on living resources, or on human health.

Recommendations:

1. Within the Chesapeake Bay region, at least two areas — Hampton Roads and Baltimore Harbor — are likely to be considered non-attainment areas under Section 304 of the Water Quality Act of 1987, requiring that water quality standards for priority pollutants be adopted for these segments. Since few water quality criteria for priority pollutants in brackish water exist, however, it is likely that EPA will simply require biological monitoring to establish effluent limitations in these areas. This would require that the states simply continue the course of action which they have already begun. While full implementation of biomonitoring will undoubtedly lead to cleaner effluents and improved water quality in these areas, the development of standards for specific toxic pollutants is also justified. These issues are not unique to the Bay, but will pertain equally to any estuary which is stressed by toxic pollutants; and many estuaries have a higher level of toxic pollution than does the Chesapeake Bay. EPA should be encouraged to develop brackish water criteria for those priority pollutants found in high concentrations in the Bay (and in other estuaries), and to require the states to adopt water quality standards based on these criteria. Because this is not strictly a Bay issue, EPA should be encouraged to complete such work within their national budget, not with funds specifically earmarked to the Bay.
2. The reauthorization of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) is perhaps the single most important act which Congress could take to deal with toxic pollution in the Bay. FIFRA has special significance to the Chesapeake Bay. While the Bay has been fortunate in suffering fewer severe toxic contamination problems than other estuaries, several pesticide-related problems have arisen which might have been prevented had FIFRA been fully and effectively implemented. Actions by state legislatures and Congress to ban or severely restrict individual pesticides such as tributyltin (TBT) are indications that the administrative system currently in place to deal with the problem of pesticides at large is not working. FIFRA reauthorization should deal with the need to expeditiously review the registration of older products so that potential contamination problems associated with chemicals such as TBT or chlordane can be prevented.

Bay monitoring and pesticide use studies conducted by the Chesapeake Bay Program have identified

those pesticides which are heavily used in the Chesapeake Bay basin and which are found in the waters or sediments of the Bay. **Whether under the authority of a reauthorization of FIFRA or under the current law, Congress should ask EPA to conduct, within the next five years, a comprehensive review of all pesticides which were registered prior to the enactment of FIFRA.**

3. Chesapeake Bay Program studies have found that for some toxic pollutants of the Bay, including poly-aromatic hydrocarbons (PAHs) and lead, the major source of the pollutant is atmospheric origin. Further, acid rain has been found to be a factor impacting anadromous fish spawning in the fresh water portions of some rivers tributary to the Bay. The atmosphere is also a major source of nitrogen, which acts not as a toxic substance, but a nutrient. **While the Chesapeake Bay Commission has not yet analyzed the Clean Air Act reauthorization bills or various proposals that have come before Congress to deal with acid rain, we would like to impress upon our Congressional delegations that clean air is indeed vital to the health of the Bay and ask them to consider impacts on the Bay in their deliberations on these issues.**
4. Tributyltin, or TBT, is a chemical compound which has been identified as having the potential to cause severe impacts on living resources of the Bay, particularly molluscs such as oysters and clams. At the urging of the Chesapeake Bay Commission, Virginia and Maryland have severely restricted the use of this pesticide on both recreational and commercial vessels. Enactment of similar federal legislation would be of assistance in reinforcing state action, and in reducing the impact of out-of-state vessels. **The federal bill restricting TBT use — S.428 introduced by Senator Trible — should be enacted.**
5. Monitoring of TBT in specific sites in the Bay was initiated by the Chesapeake Bay Liaison Office in Annapolis, using Bay Program funds. This project was short term in nature, and was designed simply to determine whether problem levels of TBT were indeed present. **A long term monitoring effort should be carried out to determine if TBT levels are increasing or decreasing, and if its impacts on living resources are detectable. A request has been made for \$175,000 in the FY 1988 budget for the Fish and Wildlife Service to conduct such monitoring. While such a program might better be carried out by NOAA or by EPA, it should indeed be funded and implemented.**
6. Currently a portion of the \$1.5 million in Chesapeake Bay funding received by NOAA is used to study the effects of toxic pollutants on living resources. This essentially provides for the collection and analysis of samples from the Bay as part of the larger National Status and Trends study. While an intensification of NOAA's efforts in the Bay is desirable, the Commission believes that it should not be accomplished at the expense of either the Stock Assessment work or the Low Dissolved Oxygen studies being conducted by NOAA at this time (see Section A on Fisheries and Living Resources). **Funding to NOAA should be increased so that the agency can carry out its responsibilities to assess the impacts of toxics on living resources without decreasing its commitment to other important Chesapeake Bay activities.**
7. The numerous Superfund and DOD hazardous waste sites in the Chesapeake Bay region indicate the high potential for environmental damage to the Bay from hazardous waste sites. The criteria for identification of these sites, and for assigning priority to sites for remedial action, should serve to ensure that the impact on the Bay and its living resources are given appropriate consideration, and that actual damage to the Bay is prevented. Furthermore, both EPA and the Department of Defense have stated their intention to review the priority assigned to sites under their jurisdiction to ensure that sites with potential impacts on the Bay have been given sufficient attention. **To ensure that these intentions are carried out, both agencies should be requested to report periodically on the status of all sites in the Bay region, and to demonstrate that damage to the Bay's resources is being prevented.**
8. Many federal agencies are involved in studying or regulating toxic contaminants; these include EPA, FDA, NOAA, FWS, and USGS, among others. **Congress should encourage EPA, as a party to the Chesapeake Bay Agreement, to ensure that efforts of all federal agencies involved in research or monitoring of toxic substances and their impacts on the Bay have coordinated their efforts to ensure that the maximum benefit from these efforts is attained, and that they are channelled into the development and implementation of the required toxic substances reduction plan.**

F. SHORELINE EROSION

Chesapeake Bay Commission Priorities

Shoreline erosion is a significant and continuing problem throughout the Chesapeake Bay region. In some localized areas, shoreline erosion constitutes a major nonpoint source of sediment entering the Bay and its tributaries. In addition to its pollutant potential, shoreline erosion presents unique problems in terms of habitat destruction, impacts on navigation, and personal property losses. Intense development along the shoreline and the removal of natural protective devices such as vegetative cover on fastlands and the destruction of wetlands have greatly exaggerated the problem. The Chesapeake Bay Commission is concerned with the low-cost amelioration of personal property losses, and wishes to ensure that necessary shoreline stabilization measures are consistent with water quality and habitat protection goals.

The Federal Role in Shoreline Erosion

The U.S. Army Corps of Engineers is actively involved in issues related to shoreline erosion both through the permitting process and through its research activities. Under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, the Corps is required to review applications and issue permits for the construction of piers, jetties, wharfs, and bulkheads, and for filling or excavating within the navigable waters and wetlands of the United States. Other federal agencies are frequently involved in the permit review process, and permits are usually required from state and local agencies as well. Through the permitting process, federal agencies exert a significant amount of influence in determining what particular types of shoreline stabilization structures will be allowed. Obviously, the type of control structure employed determines, in large measure, the degree to which wildlife habitat is impacted.

In 1985, the Baltimore District of the Corps of Engineers completed the first phase of a major Chesapeake Bay Shoreline Erosion Study designed to identify critically eroding shoreline areas within the Bay. The second, or feasibility, phase of the project, currently underway and funded jointly by the states and federal government, will focus on a series of demonstration projects involving the use of innovative and low-cost technology to control erosion along the Maryland and Virginia shoreline.

Recommendations

1. The shoreline permitting process requires a high degree of coordination among various state and federal agencies. Over the past several years, cooperative working relationships have been established between the Corps and state permitting authorities but, with three Corps Districts exercising jurisdiction in various areas of the Bay, conflicts and inconsistencies do occasionally arise. **The Chesapeake Bay Commission recommends that coordination among Corps Districts be examined and, where appropriate improved to ensure that sound and consistent decisions and recommendations are issued in an attempt to reconcile necessary erosion control measures with water quality and habitat protection goals.** This should include, at a minimum, watershed-wide guidelines concerning preferred practices and techniques and development of methodologies which adequately address the cumulative impacts of relatively minor erosion control projects.

G. WATER USE ACTIVITIES

Chesapeake Bay Commission Priorities

The category of issues referred to here as "water use activities" includes such areas as recreational and commercial vessel waste management, access to the waters of the Bay, and dredging and its associated activities. These are issues which can have significant impacts on the Chesapeake Bay, both in terms of water quality and in terms of the ability of the general community of Bay users to enjoy the waters of the Chesapeake and its environs. The Chesapeake Bay Commission believes that these issues should be considered as important elements in the overall Bay restoration and protection strategy.

The Federal Role in Chesapeake Bay Water Use Activities

There are a number of federal agencies and programs which interact directly or indirectly with these water use activities. The disposal of waste materials from recreational and commercial vessels has been a subject of concern in the Bay area for some time. Regulations governing the use of marine sanitation devices (MSDs) have been developed by the Environmental Protection Agency, but have never been effectively implemented or enforced. The Water Quality Act of 1987 allows states to adopt regulations more stringent than those developed by EPA, but no further flexibility is granted to the states. Other issues such as

nonbiodegradable debris and hazardous substance leaks or spills have been addressed inadequately or not at all. Legislation concerning both of these issues is currently before the Congress.

Because of the physical nature of the Chesapeake Bay, dredging is a topic of ongoing interest and concern. Dredging activities have been, and will continue to be, necessary in order to maintain the economic viability of the region in general and the ports in particular. The Water Resources Development Act of 1986 authorized \$16.3 billion in grants for a variety of water projects throughout the nation. Funding authorizations for the Hampton Roads and Baltimore Harbor deepening projects were included in this legislation, and planning for these projects is now well underway. Maryland and Virginia have cooperated with one another, and with federal agencies, to determine the most appropriate uses, and disposal sites, for the material to be dredged, but there is no program in place to consider various options for dredged material placement within the Chesapeake Bay system from a long-term, system-wide perspective.

Land use and water use issues, because of their mutual interdependence, cannot be arbitrarily separated. Because of the large amount of shoreline in the Bay area which is privately owned or controlled by the federal government, limited public access to the waterfront is an important consideration for boaters, tourists and Bay-area citizens desiring to enjoy the benefits and bounty of this common resource.

Recommendations

1. The question of federal regulation of waste discharges from vessels has been difficult and controversial from the outset, particularly from the perspective of the recreational boating community. Pump-out facilities in the Bay region are rare and unevenly distributed, technology has not provided inexpensive, reliable and compact MSD systems, the problem is centered around particular geographic areas (e.g., in the vicinity of marinas, near productive shellfish beds, and in narrow enclosed waterways with poor flushing characteristics), and enforcement represents a significant problem. The federal regulatory scheme must address these issues. **The Chesapeake Bay Commission recommends that the statutory and regulatory process regarding waste discharges from recreational and small commercial vessels be amended to allow the states additional flexibility in the development, implementation and enforcement of appropriate regulations.** Guidelines should be developed to assist the states in establishing criteria to be used for the designation of specific discharge and no-discharge areas in the Chesapeake Bay and its tributaries for the disposal of acceptable waste discharges from small vessels.
2. The federal government has established a number of regulations and mechanisms which define the response procedures in the immediate and long-term aftermath of major hazardous substance spills, though the cumulative effects of numerous small leaks and spills are not well addressed. Many issues regarding liability and compensation for such spills and leaks remain clouded. Plastic debris and other nonbiodegradable wastes have only recently been recognized as a significant ecological problem. **Enactment of the comprehensive Oil Spill Liability and Compensation Act of 1987 and the recently-introduced legislation to curb the environmental damage caused by plastics pollution in the waterways of this nation and the world would significantly benefit ongoing efforts to address these issues.**
3. Accommodating the continuing and increasing demand for dredged material disposal sites in the future will require increased or re-focused research efforts as well as changes in legislative and administrative policies. Some Corps Districts have developed five or ten-year plans for the disposal of dredged materials but these are inadequate to address the long-term needs of the region. Required Environmental Impact Statements for major dredging projects frequently do not consider the system-wide impacts of the projects and do not recognize the need for ongoing monitoring activities to address post-dredging habitat changes and sediment movements in the area. **The Chesapeake Bay Commission recommends that the U.S. Army Corps of Engineers, in cooperation with other federal agencies and the affected states, develop a long-range (i.e., 20-50 years), system-wide approach to address the continuing dredging needs, and associated dredged material placement issues, within the Chesapeake Bay region.**

H. POPULATION GROWTH AND LAND USE TRENDS

Chesapeake Bay Commission Priorities

The declines in water quality and living resources productivity which have occurred coincident with increased growth and population in the Chesapeake Bay drainage basin over the past thirty years have been

well-documented. Increasing populations require more land for residential, commercial and industrial development, increased high quality water supplies, additional government services such as roads, schools, and wastewater treatment facilities, and easily-accessible opportunities and facilities for water-based recreational activities. All of these demands can have profound impacts on the water quality and living resources of the Chesapeake Bay and its tributaries. The relationships among population growth, land use policies and trends, and water quality have frequently been addressed by the Chesapeake Bay Commission. The Commission is committed to the mitigation of the negative consequences of land development, the preservation of sensitive environmental areas such as wetlands, dunes and nearshore areas, and the retention of lands in low-intensity uses such as forestry and open space parklands.

The Federal Role in Population Growth and Land Use Trends

Land use planning and management are essentially the prerogative of state governments, with a number of responsibilities and authorities delegated to local jurisdictions. Land use policy is unique to each state and is based largely on long-held political and philosophical beliefs. The federal government, however, has enunciated a national policy for the protection of the environment in the National Environmental Policy Act of 1969. The Act, with its emphasis on inter-agency cooperation and coordination and requirements for comprehensive environmental impact assessments, adopts a holistic approach to environmental quality and thus incorporates many of the issues of concern in the general area of population growth and associated development. These issues extend far beyond water quality considerations since additional growth and development will also affect air quality, noise levels, toxic waste generation and disposal and, in fact, the overall quality of life.

The Congress considered, but did not enact, comprehensive land use policy legislation in the early 1970's. Several statutes have been adopted, however, which effectively establish national policy for land uses within particular areas, such as the coastal zone. The Coastal Zone Management Act of 1972 is designed to encourage the states to manage their sensitive coastal areas in an environmentally sound manner. The Act authorizes a grants program to assist states in developing and implementing coastal management strategies within federally-approved guidelines.

Other federal actions have addressed the protection and preservation of especially valuable or sensitive resource areas such as wetlands and coastal barrier beaches. Wetlands, in particular, have been the focus of a great deal of attention in recent years and federal programs have been designed for both the acquisition and the protection of coastal and inland marshes. While there is no question that the destruction of wetlands in the Chesapeake Bay region has declined markedly over the past fifteen years, it is equally clear that serious inadequacies continue to exist within the federal wetlands regulatory scheme.

Many federal land acquisition and management programs are important as means of protecting valuable habitat areas and preserving public access to the nation's beaches and other natural areas. These include the National Seashores operated through the National Park Service and the National Wildlife Refuge System administered by the U.S. Fish and Wildlife Service, among others. The Emergency Wetlands Resources Act of 1986 provides additional mechanisms for federal acquisition of wetlands areas and the Coastal Barrier Resources Act seeks to discourage the development of undeveloped coastal barrier islands.

Recommendations:

1. The Coastal Zone Management Act of 1972 has been invaluable to the states in their coastal land use planning process, and has been a key factor in the important effort to educate and involve local governments in the management program. In many areas, funds provided through state Coastal Zone Management grants have been the only means by which local jurisdictions have become involved in the process. In some states, funding under this program has also provided seed money or laid the groundwork for the development of much broader and more comprehensive land management programs. The Coastal Zone Management Act, however, has been zero-funded in the past several Administration budgets though Congress has wisely restored funding for the state and interstate grants programs. **The Chesapeake Bay Commission urges Congress to continue appropriating funds to assist the states in their coastal planning efforts under the Coastal Zone Management Act.**
2. The protection of the nation's tidal and nontidal wetlands is a vital and continuing concern. Though there is no national wetlands protection statute, the states in the Chesapeake Bay region have developed commendable programs for the protection of coastal wetlands within their jurisdiction. These programs, however, are not always adequate to address the full spectrum of issues

surrounding wetlands protection or to consider issues outside of their strict regulatory purview. Nontidal wetlands are inadequately protected throughout the area.

Section 404 of the Clean Water Act, and judicial decisions rendered pursuant to the Act, clearly indicate that the federal role and responsibility in the protection of the nation's wetlands is significant and expansive. The administration of the Section 404 permitting process, however, presents many problems in terms of effectiveness, efficiency, and consistency. The Environmental Protection Agency, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and sometimes other agencies and offices, are all involved in the permitting process. Each has different concerns and different priorities and their legislative mandates are interpreted differently. There is no commonly-accepted functional definition of a "wetland" among the agencies, and jurisdictional disputes are common. Judicial interpretations of jurisdiction and authority have sent mixed signals to regulators as well as developers and landowners. **The Chesapeake Bay Commission recommends that Congress thoroughly review the Section 404 permitting process, and request that the involved federal agencies work to develop a consistent, coordinated Bay-wide policy for the protection of tidal and nontidal wetlands within the watershed.** The policy should include a wetlands identification and classification scheme, and should address issues such as mitigation feasibility and technology, advanced identification, and the cumulative impacts of wetlands despoliation from a watershed perspective.

3. The federal consistency provisions of the Coastal Zone Management Act have been helpful in ensuring that federal activities which significantly impact coastal areas are consistent with the states' approved coastal zone management programs. Consistency provisions within the Water Quality Act of 1987 will broaden this responsibility to include the states' nonpoint source management programs. **The Chesapeake Bay Commission fully supports these provisions and urges that activities on federal lands and on federally-regulated projects be designed and conducted to incorporate exemplary land use practices and policy consistent with the goals of the Chesapeake Bay restoration and protection plan.**
4. **Federal land acquisition programs within the Bay watershed should give priority consideration to Bay and riverfront properties in order to provide increased public access to tidal waters and shorelines and to protect such areas from intensive development.**
5. Links between air and water quality are being increasingly recognized nationwide and research has shown that atmospheric deposition contributes significantly to the amounts of nitrogen and phosphorus in the Chesapeake Bay system. Air quality in major metropolitan areas throughout the watershed is currently below federal standards and may deteriorate further as numbers of people, automobiles and industries continue to grow. **The Chesapeake Bay Commission supports the reauthorization of the Clean Air Act and urges that new research initiatives be developed to monitor and assess the relationships between air and water quality.**

I. INSTITUTIONAL ARRANGEMENTS

Chesapeake Bay Commission Priorities

Any large federal-state management effort such as the Chesapeake Bay program will necessarily require a complex set of institutional structures to ensure ongoing coordination and assessment of progress. One of the principal reasons that the Chesapeake Bay Commission was formed was to ensure that management of the Bay is carried out in a coordinated cooperative manner. The Commission was a signatory to the 1983 Chesapeake Bay Agreement, and endorsed the creation of the Chesapeake Executive Council, its Implementation Committee, its Citizens and Scientific and Technical Advisory Committees and the Chesapeake Bay Liaison Office which serves as its technical support arm, as the appropriate institutional structure to administer the federal/state Chesapeake Bay restoration effort. The Commission participates in the Implementation Committee and its various subcommittees, and monitors the activities of the Executive Council and Advisory Committees.

The Commission has frequently found fault with the Chesapeake Bay restoration planning effort for its lack of clear objectives and specific timetables, and was among the first to call for a new Chesapeake Bay Agreement at the Congressional oversight hearings on the Bay Program sponsored by Senator Mathias in June of 1986. The Commission is now participating in the drafting of the proposed 1987 Chesapeake Bay Agreement, and anticipates the signing of a final agreement in December of this year.

The Federal Role in Governance of the Bay Program

EPA and six other federal agencies, in partnership with the states and the District of Columbia, are involved in the Bay restoration effort. As the lead agency, EPA has received an annual appropriation of \$10 million (\$13 million under the Water Quality Act of 1987). With this funding it maintains a Chesapeake Bay Program Office to carry out support functions such as monitoring and data management, and provides implementation grants to assist the states in carrying out their Chesapeake Bay Initiatives. EPA has entered into Memoranda of Understanding or Joint Resolutions with the six other federal agencies, which include the Soil Conservation Service (SCS), the National Oceanic and Atmospheric Administration (NOAA), the Fish and Wildlife Service (FWS), the U.S. Geological Survey (USGS), the Army Corps of Engineers (Corps), and the Department of Defense (DOD). The terms of the Memoranda are summarized in Table 1.

The federal agencies are largely engaged in research and technical assistance, while actual management activities, such as the development of cost share agreements with farmers for best management practices, the setting of NPDES permit limits, or the construction and upgrading of sewage treatment plants, are generally carried out by the states. Funds appropriated by the states and funding for other federal water quality, fisheries, sewage treatment construction, shore erosion control, soil erosion, and other programs, in combination, account for the greater share of implementation funds for the Bay restoration effort.

Recommendations:

1. Members of Congress should be aware that improvements to the current structure for governance of the Chesapeake Bay Program, i.e., the Chesapeake Executive Council, are being discussed. **State participants are seeking ways to increase their roles and responsibilities concerning the funding of ongoing support functions of the Chesapeake Bay Program Office, and in the allocation and use of implementation grants.** Whether enhancing the state participation in these functions would require new language in Section 117 of the Clean Water Act is not yet clear.
2. Memoranda of Understanding between EPA and the other federal participants in the Chesapeake Bay Restoration effort were signed in 1984. Memoranda have not been formally reviewed or updated since that time, and they are not specifically mentioned in the proposed 1987 Chesapeake Bay Agreement. The Agreement does call for an annual meeting of the signatories to the Agreement to review progress in meeting its goals, objectives and commitments. It would be appropriate to review progress under each of the Memoranda in a similar time frame. **Congress could hold oversight hearings on an annual basis to determine if all of the appropriate programs and projects are being effectively implemented and coordinated. It would also seem appropriate to have some reference to the participation of the other federal agencies in the governance section of the Agreement.**
3. Both EPA and NOAA have national estuaries programs, as well as specific Chesapeake Bay research and management efforts. The proposed 1987 Chesapeake Bay Agreement establishes the protection and restoration of living resources as the principal criterion for judging the efficacy of all other program efforts. Consequently, NOAA's role in fisheries management and the assessment of fisheries resources, and the evaluation of the impacts of pollutants on fisheries resources, is vital. While links between NOAA and EPA have been established, the coordination of activities of the two agencies and their state counterparts must continue to improve. **Congress should, in its oversight of the two Chesapeake Bay efforts (as well as the two national estuaries programs), continue to monitor the EPA-NOAA relationship to ensure integration of water quality and living resource activities.**
4. The Soil Conservation Service has been a very active participant in the Chesapeake Bay Program. Currently it is the only agency within the Department of Agriculture which has a Memorandum of Understanding with EPA. Other federal agricultural agencies, however, have significant roles in the process. In particular, the Agricultural Stabilization and Conservation Service is vital because it is responsible for the federal best management practices cost share funding program. ASCS also has major responsibilities in the implementation of the conservation provisions of the Food Security Act of 1985, such as "sodbuster," "swampbuster," "conservation compliance," and the Conservation Reserve Program. **Congress should ask the Secretary of Agriculture to examine all the programs of the Department to determine how they might contribute to the Bay restoration effort, and to consider signing a Department-wide Memorandum of Understanding or a Joint Resolution with EPA.**
5. Sophisticated computer models are being used to help decision makers determine which pollution control strategies should be incorporated into the restoration process. A three-dimensional, time-variable model is to be developed as a cooperative, jointly funded effort by EPA and the Corps of

Engineers. Congress should ensure that funding is provided, and spent effectively, for the modeling effort.

6. The involvement of many federal agencies in the problem of toxic pollution of the Bay argues for the need for an interagency working group to ensure that all of these efforts are focused, coordinated, and making the most cost-effective use of funds. In reviewing federal agency efforts in the Bay, Congress should focus attention on how a coordinated toxic substances research, monitoring and control program is being developed.
7. The proposed 1987 Chesapeake Bay Agreement calls for the protection of wetlands, both tidal and nontidal. Such an effort will involve the Corps of Engineers, EPA, NOAA and FWS. Of particular concern is the issue of whether both tidal and nontidal wetlands receive the same high level of protection throughout the Bay region. The Corps of Engineers and the other federal agencies involved in wetlands regulation should be asked to review implementation of section 10 and 404 permits in all Districts in the Bay region. Together with the other federal agencies involved in wetlands management, the states, and local governments, a Chesapeake Bay wetlands protection plan should be developed and implemented.
8. Both the EPA-DOD Joint Resolution and the proposed 1987 Chesapeake Bay Agreement focus attention on the environmental management of federal facilities in the Chesapeake Bay region. The Chesapeake Bay Commission believes that all government owned and operated facilities in the basin—federal as well as state—should be models of environmentally sound management. The Commission asks members of Congress from the Bay region to assist in monitoring the management of federal facilities within their districts. Members of Congress should consider asking EPA to report annually on the progress achieved in implementing the plan for water quality improvement at federal facilities.
9. In addition to the authorization of funds for EPA, special Chesapeake Bay appropriations have been made to other federal agencies, including the Soil Conservation Service, National Oceanic and Atmospheric Administration, the Fish and Wildlife Service and the Corps of Engineers. Table 1 shows the amount of these appropriations for 1987 and the activities they support. Similar amounts have been requested by Bay region Senators and Representatives for Fiscal Year 1988. Given the importance of the activities of these agencies, the Commission encourages members of Congress to support similar appropriations in coming years.

TABLE 1 - FEDERAL AGENCY ACTIVITIES

MEMORANDUM OF UNDERSTANDING between EPA and other federal agencies		
EPA has signed Memoranda of Understanding with five other federal agencies, and a Joint Resolution with the Department of Defense. All of these agreements have several common features which are listed below. Tasks specific to each agency are shown in the other sections of this Table. Participate in Implementation Committee and appropriate Subcommittees Assist in public awareness programs Provide data to, help manage, and have access to Chesapeake Bay Data Base Coordinate ongoing studies with Chesapeake Bay efforts Provide technical assistance to states and organizations involved in Chesapeake Bay restoration		
SCS		
Assist in identification of priority watersheds and consider priority watersheds in SCS program and project decisions Identify cost effective best management practices and develop technical standards and specifications for them Develop a clearinghouse for nonpoint source information Provide technical assistance to states and Soil and Water Conservation Districts regarding BMPs for soil and water conservation Provide training to help federal, state, and local agency personnel		
USGS		
Continue Fall Line monitoring program Evaluate alternate methods of calculating pollutant loads Cooperate on Lower Potomac Estuary Study Cooperate in development of models Provide assistance in cartographic techniques Cooperate in evaluating impact of groundwater on the Bay		
DOD		
Give priority consideration to funding pollution abatement projects and studies affecting Chesapeake Bay Initiate an environmental self-audit of installations in the region Review existing land management practices to reduce nonpoint source pollution EPA will ensure reissuance of all major DOD NPDES permits by 9/30/1985 EPA, in cooperation with states, will annually inspect each major DOD installation in the region for compliance		
Chesapeake Bay Appropriations - FY 1987		
Agency	Funds	Activities
EPA	\$10 M	Maintenance of Liaison Office; Data management, monitoring, modelling, planning and analysis; Implementation Grants to states
NOAA	\$1.5 M	Assessment of finfish stocks, Fisheries statistics, Toxics effects studies, Eutrophication studies, Data acquisition and transfer
SCS	\$1.14 M	Thirty-one positions for technical assistance for control of agricultural nonpoint source pollution
FWS	\$1 M	Habitat resource assessments, Resource trend determination, Fishery resource support, Restoration of striped bass stocks
CORPS	\$8 M	Shore erosion study, Drought management study
CORPS		
Assist in the identification of priority research modeling and monitoring needs, and identify potential for joint funding of projects Evaluate the District level programs and make recommendations for possible modifications to improve effectiveness Coordinate Shore Erosion Control Study Coordinate annual maintenance dredging program with state and federal agencies to develop environmentally acceptable disposal plans		
FWS		
Assist in biological monitoring program Assemble a reference repository of indicator and other Bay organisms Help develop a coherent and consistent policy of maximum protection for Chesapeake Bay wetlands Assist in development of integrated land use programs designed to reduce soil erosion and nonpoint source runoff Evaluate contamination in the environment and in fish and wildlife tissue Assist and coordinate striped bass restoration Assist in preparation of anadromous fish restoration plans		
NOAA		
Cooperate in monitoring the Bay and its living resources Use programs such as Sea Grant, Coastal Zone Management and Estuarine Sanctuaries Program, to further the Bay effort Coordinate hydrographic and water quality modeling efforts		

STATEMENT OF
LEE M. THOMAS
ADMINISTRATOR
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION
OF THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS COMMITTEE
U.S. SENATE

September 20, 1988

Good morning, Mr. Chairman and members of the Subcommittee. I am Lee M. Thomas, Administrator of the U.S. Environmental Protection Agency. It is a pleasure to join with other signatories of the 1987 Chesapeake Bay Agreement in reporting to you this morning on the progress we have made since the signing of this historic document last December and, more important, the challenging issues we face in implementing its provisions over the months and years ahead.

As you know, the Federal Government's concern about the Chesapeake goes back over a decade. The degradation of the Bay and its declining resources prompted Congress in 1975 to order a comprehensive investigation by EPA of the environmental problems besetting the estuary and its tributaries. This study was carried out over the next seven years at a cost of 27 million dollars.

The research findings and recommended remedial strategies, published in 1983, led to the signing of the first Chesapeake Bay Agreement in December of the same year, forging the first links in what has become an enduring partnership and commitment to the

Chesapeake among the Commonwealths of Pennsylvania and Virginia, the State of Maryland, the District of Columbia, the Chesapeake Bay Commission, and the Environmental Protection Agency as well as other Federal agencies.

EPA's participation in this partnership, as you know, became a statutory responsibility under the 1987 amendments to the Clean Water Act. That legislation ensures an ongoing ERA role in the areas of Federal-State coordination and research, as well as providing for the continuity of Federal implementation grants to the States.

The Agreement of 1983, in four brief paragraphs, stated the need for a "cooperative approach" to deal with the problems of the Bay and laid the foundation for an organizational structure to lead the concerted effort.

The Agreement of 1987 goes well beyond the original compact in both scope and detail. In addition to establishing broad goals and objectives under six topical headings ranging from Water Quality to Governance, the current Agreement sets forth a series of specific commitments for action, virtually all of which include deadlines for fulfillment.

The schedule spelled out by the Agreement is a demanding one, but no less so than the demands of the restoration job to be done. We cannot afford to mark time in dealing with the Bay's problems, for those problems are not static; they multiply in

tandem with population growth and the pace of development in the watershed.

The work teams formed by the participating State and Federal agencies to develop the required Commitment plans and strategies have been equal to the challenge. The first series of milestones under the Agreement has been met.

In July, the Chesapeake Executive Council--made up of the Agreement signatories--was able to approve and adopt strategies for:

- o A 40 percent reduction by the year 2000 in nutrients entering the Bay. A strong thrust toward new wastewater treatment technologies to remove nitrogen is an important element of the nutrient strategy. It also establishes a new national benchmark in its reliance on controlling agricultural nonpoint sources of nutrients. The strategy has been praised by citizen groups and elected officials.
- o Control of conventional pollutants. This strategy relies on continued implementation and enforcement of programs such as HPDES permits to control point sources and urban erosion/sedimentation controls and agricultural BMPs to combat nonpoint sources.
- o Monitoring living resources of the Bay. The plan provides a framework for consistent, sustained monitoring of key Bay species and other living resources, including wetlands. Data needs are identified, existing programs reviewed, deficiencies noted, and recommendations are proposed, including integration with water quality monitoring programs.
- | o Stock assessment. Scientists and resource managers making up NOAA's Chesapeake Bay Stock Assessment Committee developed the plan for comprehensive, systematic assessments geared to providing long-term data for all critical life stages of finfish and shellfish species of the Bay system.
- o Developing resource management strategies. A schedule was completed which sets deadlines for resource management strategies or plans for five categories of Bay species in stages through December 1992.

- o A comprehensive research plan. As a mixture of marine and freshwater systems, estuaries are the most complex of all aquatic environments. Research into properties and processes of the Chesapeake Bay must meet short-term management needs, in addition to exploring the more fundamental scientific issues to prepare for future program decisions. The research plan includes procedures to strengthen coordination among Bay scientists, program managers, and advisory groups by involving all of them in setting research priorities.
- o Public access. To increase public awareness and identification with the Bay, a work group has inventoried access facilities and is preparing a guide book with region maps for public distribution.
- o Federal facilities. Seven agencies with facilities or property that contribute to Bay pollution have joined in planning to control and reduce nutrients, toxicants and conventional pollutants from both point and nonpoint sources. Each agency will have its own implementation schedule with funding requested through the normal Federal budget process.
- o Federal workplan. The plan describes both Bay-specific and Bay-related programs of eight Federal agencies, and outlines a process to increase cooperation and coordination among these agencies and with the States.

A number of other commitments that came due earlier in the year also were met.

Guidelines for the protection of water quality and habitat conditions necessary to support living resources in the Bay system were adopted in January. These had been developed over the preceding two years by a Bay Program task force. A Local Government Advisory Committee was set up in March to stimulate greater participation in the Bay program at the city and county level. State and Federal communication plans were developed by March, and these became the basis for a Baywide information, education and public participation plan completed in May.

In addition to moving ahead with the implementation of all these strategies, there are Bay Program work teams and panels preparing the next series of Commitment plans due at the end of the year. These include:

- o a strategy for the reduction of toxic contaminants consistent with provisions of the Water Quality Act of 1987;
- o a policy for protecting both tidal and nontidal wetlands, and a strategy for incentives and technical assistance to help local government protect these and other fragile natural areas;
- o a report on the environmental ramifications of population growth and development anticipated in the Bay watershed by the year 2020;
- o policies and guidelines to reduce the adverse environmental effects of development and to aid local governments in evaluating land-use decisions;
- o a strategy for fish passages at dams;
- o the first Chesapeake Bay annual workplan; and
- o a public access guidebook.

There are other commitments and other deadlines beyond those I have outlined, but I do not believe it is necessary to look beyond January of 1989 to provide a perspective on the scope and complexity of responsibilities entailed in carrying out the 1987 Agreement.

The Federal Government, as you know, has an essential role to play in moving the restoration program forward as mandated by the 1987 Clean Water Act amendments. EPA maintains a Chesapeake Bay Liaison Office to coordinate the overall State-Federal effort, and also serves as the lead agency for the Federal components

involved. And that Federal commitment is growing. We have strengthened our memoranda of understanding covering Bay Program participation of the Soil Conservation Service, the Fish and Wildlife Service, and the Army Corps of Engineers. The National Oceanic and Atmospheric Administration and the U.S. Geological Survey are also partners in the Bay Program. We have recently entered into MOUs with the Forest Service and the Agricultural Stabilization and Conservation Service to formalize their participation. When appropriate, we hope to work out parallel accords with the National Park Service and the Federal Highway Administration. We continue to work closely with the Defense Department to further the participation of its facilities in the restoration program.

Mr. Chairman you asked specifically whether additional legislation, Federal funding, or program resources are needed to assure the effective implementation of the Bay Agreement. We appreciate this Committee's continued support of the Chesapeake cleanup and the national estuary restoration program as a whole. Funding is, of course, a major consideration, and will continue to be for years to come. We estimate that nearly one billion dollars will be expended in the watershed by the year 2000 just for the control of nutrients from point and nonpoint sources. We expect the States to pay a significant portion of this cost and will look at contributions by private industry as well as new funding mechanisms. The Federal government will continue

to have an important role in the process but polluters and the States must continue to provide most of the funding.

We appreciate the fact that the Congress has maintained funding of the Bay Program within the budget constraints that have prevailed. We hope that this support will continue in the future as we move to more fully define the programs needed to reduce levels of nitrogen, phosphorus and toxic pollutants reaching the Bay. The current funding level provides \$10 million a year used primarily to continue nonpoint source abatement programs in priority watersheds of the Bay basin. States match this grant money dollar for dollar. The Clean Water Act amendments of 1987 also established a new program of grants to help States establish nonpoint source management programs. This program has not yet been funded.

As important as funding is, we also recognize the need to further the integration of Bay-related programs--within EPA, between Federal agencies, and with the States--to achieve maximum results for the dollars we spend.

A cross-media approach to environmental problems has been a major management objective within EPA, an objective which has had my personal attention since becoming Administrator. Its application is fully appropriate to the Bay Program as the pollutants that affect the water quality and living resources of the Chesapeake involve all of our statutory programs.

Our Regional Office in Philadelphia, which administers EPA's participation in the Bay Program, is establishing an ad hoc work group including representatives from each of its divisions and program areas. This group will be responsible for preparing an analysis of the combined impact upon the Bay of all pollutant sources and drawing together the administrative and regulatory programs that deal with them.

The toxics reduction strategy now being developed exemplifies this integrated approach. Air quality and hazardous waste managers in EPA and the Bay area states are participating in the review of strategy drafts. In response to the recent Environmental Defense Fund study our Narragansett Laboratory is working with the Bay Liaison Office on air quality modeling and data analysis. The Office of Ground-Water Protection at the headquarters and regional level is also involved because of the impact of pesticides and fertilizers.

We also are working more closely with other Federal agencies as their own Bay-related activities expand to support common program goals. As the coordinated Federal workplan developed in response to the Agreement indicates, those activities now extend to every area of the restoration effort.

SCS has initiated an accelerated program of conservation planning and technical assistance in the Bay basin, allocating additional staff and dollars to the program. The Conservation Reserve provisions of the Food Security Act of 1985 directly

support our efforts to curb soil erosion and reduce levels of nutrients reaching the Bay. SCS expects to have 65 percent of highly erodible acreage in the basin under approved conservation plans as this fiscal year comes to an end, and intends to bring the remainder into the program during the course of the coming 12 months.

We are coordinating closely with NOAA in implementation of the Bay research program. We also are working through NOAA's Estuarine Programs Office to coordinate other Bay-related efforts supported by a number of the agency's components, including its Office of Ocean and Coastal Resource Management, Sea Grant Program, and National Marine Fisheries Service.

The Fish and Wildlife Service is directly participating in a variety of activities concerning the living resources of the Bay. FWS recently reorganized its staff under Mr. William Ashe, the Associate Regional Administrator, and will virtually double staff resources devoted to Bay-oriented programs.

The Army Corps of Engineers has a lead role in development of the 3-D, time-variable model that will play an essential role in evaluating and projecting the results of restoration actions when it becomes operational in 1991.

The Defense Department is moving ahead with improvements to reduce pollution from its facilities. We also are pleased that the Navy recently gave Rear Admiral Jimmy Pappas, Commander of

the Norfolk Naval Base, overall direction of that service's involvement in the Bay Program, which assures high-level attention to the impact of the Navy's operations upon Bay water quality or other environmental effects.

All of the Federal actions I have mentioned, and the many others that contribute to the Bay restoration, are concrete examples of the Federal commitment to the program and the coordination of our efforts. We will continue moving forward with the integration of our efforts, not only among Federal agencies but with the States as well.

We all recognize that drafting the strategies to meet Bay Agreement commitments is just the first small step toward the ultimate goal of rebuilding and protecting the living resources of this estuary system. The strategy to reduce nutrient loadings by 40 percent, for example, includes a series of steps, complicated in themselves, that will evolve over the years ahead. To illustrate:

- o States are committed to review and update their implementation plans on an annual basis;
- o The effectiveness and durability of "best management practices" must be fully evaluated;
- o The cost, feasibility, and efficiency of biological nutrient removal must be explored in terms of the operation of wastewater treatment plants throughout the watershed;
- o Loadings data must be improved; and,
- o The 40 percent reduction goal itself is to be re-evaluated in 1991 in the light of data produced by research, modeling and monitoring by that time.

The elements I have just cited, of course, constitute only a partial list of the requirements to carry out just one of the many commitments included in the Bay Agreement. The toxics reduction strategy now in preparation also will be a step-by-step process leading to a comprehensive re-evaluation of progress and overall direction in 1992.

Despite the awesome proportions of the Bay restoration program, however, I am optimistic that we can succeed.

The governments of the Chesapeake basin have demonstrated that they can work together to establish common goals and to put together programs to achieve them. We also have recognized the importance of fully informing the public of the environmental problems involved and inviting broad public participation in planning and decision-making.

The body of experience developed over the course of building the Chesapeake Bay program also has application to the Nation's other endangered estuaries now earmarked for attention by our National Estuary Program. We know that each of these systems is unique in terms of the species to be saved, the water quality problems involved, and the sources of pollution to be controlled, but there is nevertheless much to be gained by sharing research data and organizational experience through technology transfer programs and periodic Estuary Project conferences.

We welcome, too, the continued support and interest of this Subcommittee and other committees whose jurisdictions relate to estuary programs. The Bay Agreement calls for annual reports, and the Clean Water Act requires biennial reports under Section 117, but hearings such as this are also of mutual benefit in helping us to assess our progress in carrying out the important tasks imposed by statute and compacts such as the Chesapeake Bay Agreement.

I would be happy to respond to any questions you may have.



Chesapeake Bay Foundation

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"RECOMMENDATIONS FOR FEDERAL ACTION TO AID CHESAPEAKE BAY RESTORATION"

Statement of

WILLIAM C. BAKER
PRESIDENT
CHESAPEAKE BAY FOUNDATION

before the

UNITED STATES SENATE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORK
SUBCOMMITTEE ON ENVIRONMENTAL PROTECTIC

September 20, 1988

Washington, D.C.

I. Introduction

The Chesapeake Bay Foundation (CBF) is a nonprofit organization dedicated to the protection and restoration of the Chesapeake Bay and its resources. Founded in 1966, we now have more than 60,000 members representing every state in the Union and 14 foreign countries. CBF has offices in Annapolis, MD, Richmond, VA, and Harrisburg, PA. With programs in environmental education, land preservation, environmental advocacy and legal defense, CBF is actively involved in all facets of the Chesapeake Bay cleanup efforts.

II. Background

On June 24, 1986, in a hearing convened by Senator Charles Mathias, EPA Administrator Lee Thomas first called for a new Chesapeake Bay "Agreement." Subsequently, Governor Gerald Baliles added further definition to the concept and recommended moving ahead with it. He soon received the enthusiastic endorsement of Governors William Donald Schaefer and Robert Casey, and the three of them, with Mayor Barry, Administrator Thomas and Chesapeake Bay Commission Chairman Cole, developed and signed the historic 1987 Agreement. We commend all of the signatories to that document for their diligent attention to meeting on schedule the commitments contained therein. Much more needs to be done, of course, but we have a good start.

Of particular note is the center-piece of the Basinwide Nutrient Reduction Strategy. The strategy is far-reaching, comprehensive, and yes, expensive. It is a clear road map depicting the route by which the several signatory jurisdictions must travel to accomplish a 40 percent reduction in nutrient loads by the end of the century.

Also worth mentioning is the ongoing development of a Basinwide Toxics Reduction Strategy. This plan, more difficult to draft than the nutrient reduction plan, must effect significant toxic load reductions in the soil, water and air of the region, without the benefit of concrete quantitative targets, as was the case in the nutrient strategy. It is our hope that this open-ended commitment will motivate government to seek dramatic reductions on toxic discharges into the Bay watershed. Merely adopting the elements of the Clean Water Act as amended is insufficient. The challenge is great, but we feel that the very survival of the Chesapeake Bay is at stake.

Finally, the states and the District of Columbia are drafting a Baywide policy for the protection of tidal and non-tidal wetlands. Overall, the most recent draft of the

strategy is quite good, although a few parts still need improvement. The wetlands strategy, coupled with recent efforts in Maryland and Virginia to initiate state legislation protecting non-tidal wetlands suggests that real gains in wetlands protection within the Chesapeake Bay watershed are imminent.

III. A Role for the Federal Government to Play

The Environmental Protection Agency deserves special praise for its efforts in bringing the states together. Such interstate cooperation was unheard of ten years ago. EPA has also provided money for the scientific investigation that prompted much of the present Chesapeake clean-up activity as well as funding for the regional liaison office in Annapolis. That office has been a valuable coordinating mechanism for the states, especially in conjunction with efforts related to the federal grants provided by the Chesapeake Bay Program.

But while EPA has promoted cooperation among the states, it has shown little inclination to take a leadership role. On matters such as setting water quality standards, financing water quality improvements, or aggressively enforcing existing laws, EPA defers to the states. Moreover, in cases where EPA plays an ancillary role to other federal agencies, as is the case of wetlands review, EPA has all too often been a timid environmental advocate.

That the present EPA prefers a diminished role in environmental protection is poignantly ironic, especially at a time when our nation's environment is so obviously and severely stressed. Daily, we read stories about acid rain, the greenhouse effect, and depleted ozone. Nightly, we watch clips of medical wastes and dead fish washing ashore on our beaches. And sadly, nowhere are the stresses to our environment more severe than in the Chesapeake Bay, once called the crown jewel of the world's estuaries, but now a body of water that is struggling for its very survival.

The federal government, and especially EPA, should play a very active role in the Chesapeake Bay's management, because pollution ignores political boundaries. In addition, the federal government alone has sufficient resources to tackle pollution problems on the grand scale that the Chesapeake Bay demands. Moreover, the Chesapeake Bay is a national treasure, and ought to provide the country and the federal government with a national model on how to effectively deal with pollution concerns that are plaguing all of our nation's coastal resources. If not EPA and her sister agencies, who else will take on the very difficult task of developing and recommending the truly regional strategies that will be required to successfully address the Bay's ills?

IV. Proposals for Federal Involvement in the Bay Clean-up

A. Agriculture

Agriculture constitutes the principal component of non-point source pollution, which accounts for fully two-thirds of the Bay's annual nitrogen, and about one-third of its phosphorus loads. And yet, agriculture has been largely exempted from government measures aimed at abating pollution under the Clean Water Act. Instead, the historic federal approach to stemming agricultural runoff has been characterized by uneven regional planning and voluntary "compliance."

It is fair to say that planning and "volunteerism" have so far reaped scant returns with regard to pollution abatement nation-wide. This is due in part to the high cost of volunteerism. At present, most conservation practices are cost-shared in excess of 50 percent by state and federal agencies. Moreover, historically, many cost-shared practices were implemented on lands without serious erosion problems. Finally, soil conservation programs have traditionally focused on farm productivity and sought to conserve the soil resource. Unfortunately, soil conservation practices are not necessarily adequate water pollution abatement practices. This is particularly true with regard to nitrogen which dissolves in surface and groundwater rather than adhering to sediment-- which is the object of most agricultural Best Management Practices.

Recently, more attention has been devoted to nutrient management practices, especially in the Bay states. Also, targeting of state and federal resources to specific regions that have special water quality problems is increasing. And, new federal laws have sought to take the federal government out of the business of subsidizing abusive land-use practices. These developments, especially targeting governmental resources and eliminating subsidies for poor land use practices, hold the greatest promise for the future. While both the states and the federal government have moved in this direction, the pace of change must accelerate, and the commitment must endure if water quality impairment due to agricultural pollution is to be eliminated.

1. Conservation Reserve Program

One program that holds special promise for the Bay is the Conservation Reserve Program (CRP). CRP pays farmers to remove from production highly erodible farmland or land adjoining waterways. Until recently CRP was not economically attractive to area farmers. However, increased

federal rental rates have encouraged participation. New state incentives "piggybacking" on the federal program have further augmented area sign-ups.

Nevertheless, CRP is not likely to reach its true potential without an extension and broadening of its mandate. The program is presently authorized through 1990, which is too short a period to take full advantage of the program. Moreover, greater water quality benefits could be had if CRP were more directly targeted to water quality. By expanding eligibility, CRP could be used to protect wetlands and groundwater recharge areas, for example, in addition to providing stream buffers.

2. Conservation Compliance

In conjunction with extending CRP authorization, care should be exercised to ensure that conservation compliance is implemented and enforced. Conservation compliance prohibits farmers who cultivate highly erodible lands without conservation practices from receiving federal farm subsidies. This law accomplishes the necessary effect of getting the federal government out of the business of subsidizing abusive land use practices.

Unfortunately, the U.S. Department of Agriculture has already begun to retreat from its earlier resolve to implement this law. In an attempt to mollify its constituency, USDA has opened a significant loophole in conservation compliance (Alternative Conservation Systems). In doing so, USDA has diminished the conservation potential of conservation compliance, and thereby undercut the states' Nutrient Reduction Strategy, which relied heavily on conservation compliance in order to meet the 40 percent nutrient reduction goal.

If conservation compliance is to work, then the federal government will have to bear the courage of its convictions. The policy is sound-- the federal government should not subsidize abusive farming. Conservation Compliance may sting some farmers, but the law is a fair one, and should be implemented without self-defeating loopholes.

3. Clean Water Act Section 319

In addition to bolstering the Food Security Act's conservation programs, it is time to meet the commitment Congress made to address nonpoint source pollution by funding Clean Water Act section 319. Section 319 requires the states to identify state waters that are impaired by agricultural and other nonpoint source pollution. The states are also required to write management plans that will eliminate nonpoint source impairment.

Although section 319 was authorized in the 1987 Clean Water Act Amendments, no funds have yet been appropriated. This type of half-measure perpetuates an historic and unfortunate federal disregard for nonpoint source pollution. Federal neglect is a significant reason that nonpoint source pollution now frequently predominates as the cause of water quality impairment around the nation.

In order to reverse the trend, Congress must ensure that adequate funds are available to enable the states to identify diverse pollution sources, plan for their clean-up, and implement best management practices and other innovative clean-up strategies. Moreover, it is time to go beyond section 319 to take a hard look at whether voluntary programs alone will suffice to eliminate nonpoint source and agriculturally related water quality impairment of our nation's waters.

B. Air Pollution

To date, the Bay cleanup has focused on water quality and water-based pollution. This media-specific approach is the hallmark of national environmental legislation and regulation. Nature, however, is not so easily pigeon-holed, and indeed, our best scientific data indicate that as much as 25% of all nitrogen and millions of pounds of toxic chemicals enter the Bay not as water-borne pollutants, but through atmospheric deposition.

This revelation, that clean water depends upon clean air, so far has escaped incorporation into the Bay restoration programs. To continue to ignore the tremendous impact air pollution has on the Bay will likely foreclose our clean-up efforts. The time has come for the Chesapeake Bay Program participants to look above the horizon and directly address regional air quality problems.

Because air contaminants often originate from distant sources, the federal government must take the lead in any air pollution reduction effort. A critical first step is to regulate power plant emissions that cause acid rain, and NO_x pollution. Several bills are pending in the U.S. Congress that would reduce current levels of these emissions. Prompt and aggressive action will aid efforts to reduce nutrient loadings to the Bay, and acidification of vital finfish habitat.

Recent Right-to-Know legislation has provided graphic evidence that very few of the myriad sources of toxic chemical discharges are regulated under existing law. Airborne toxics are a case in point. A recent study found

that less than one fourth of reported air toxic emissions in Maryland were subject to any pollution controls at all.

This abject lack of regulatory control on airborne toxics flies in the face of public assumptions that the federal government and/or the states are protecting public health and the environment from poisonous, and often carcinogenic chemicals.

Now is the time to act. Specifically, the states must incorporate air toxics in their Bay-wide toxics reduction strategy. In addition, Congress and the President must act to break the logjam on the pending reauthorization of the Clean Air Act, and incorporate curbs on airborne toxics in the new legislation.

C. Point-source nutrients

1. Advanced Wastewater Treatment Funding

In 1983 EPA released several reports describing the state of the Bay, and the reasons for its decline. Excessive nutrient loadings, i.e., nitrogen and phosphorus, were identified as the principal cause of worsening water quality. Since that time, EPA has consistently stressed the need to reduce nutrient loadings Baywide, and has channeled Bay Program grants into nonpoint source controls to reduce nutrient-rich runoff from farms and development. More recently, EPA took the lead in calling for Baywide nutrient reductions of 40 percent-- for both nonpoint sources, as well as industrial and municipal point sources.

Notwithstanding EPA's consistent emphasis on nutrient reductions, its policy of funding nonpoint source nutrient controls, and its strenuous support of the 40 percent nutrient reduction goal, EPA refuses to allow the states to use federal grants to fund nitrogen removal at municipal sewage treatment plants.

Nutrient removal, also called advanced wastewater treatment (AWT), is essential in order to attain the Bay Agreement goal of a 40 percent nutrient reduction by 2000. Sewage treatment plants account for 33 percent of nitrogen, and 61 percent of phosphorus loadings each year. Maryland and Virginia have acknowledged the need for AWT and have promised to construct the necessary facilities at all significant sewage treatment plants.

EPA needs to revisit its nutrient reduction funding policy in light of the 40 percent reduction strategy. This new management strategy supercedes existing Chesapeake Bay nutrient reduction policies, and should provide the basis

for future EPA funding decisions. By amending its policy, EPA will provide needed seed money for necessary nutrient reduction projects, as well as remove a significant impediment to the adoption of nutrient standards by the various jurisdictions.

2. Nutrient standards

The time has come for EPA to require states to incorporate nutrient effluent limits in permits for major sewage treatment plants and significant industrial dischargers. Mandating effluent limits would aid the states in implementing advanced wastewater treatment at significant municipal sewage plants. Moreover, it would ensure equitable sharing of nutrient load reductions among the jurisdictions.

3. Monitoring and Modeling

In order to establish and enforce nutrient standards, EPA needs to ensure that uniform monitoring within the entire Chesapeake Bay watershed occurs. In addition, EPA must make certain that all necessary data required for proper development, calibration and utilization of the next generation Chesapeake Bay management model are identified and collected so as to provide appropriate and timely input for that model in 1991.

D. Wetlands

In recent times we have come to understand that wetlands provide a wealth of social benefits, including flood storage, groundwater recharge, pollution abatement, wildlife habitat and open space. And yet, notwithstanding federal regulation under the Clean Water Act section 404, our Nation's wetlands resources continue to shrink. In the Chesapeake Bay watershed, our best statistics indicate that from the mid 1950's to the late 1970's about 133,000 acres of wetlands have been lost. These invaluable lands are destroyed in the name of development, agriculture, forestry, and flood prevention. It is indisputable that continued losses of irreplaceable wetlands will profoundly affect the Bay's ability to regain its once abundant fisheries and wildlife.

In order to reverse the continuing trend of unacceptable wetlands losses we must first establish a national policy embodied in federal legislation mandating wetlands protection. National policy should be to effect a net gain in our wetlands resource. To accomplish this goal, section 404 of the Clean Water Act must be overhauled, and a clear mandate to preserve wetlands must be incorporated into

new law. Thus, the Army Corps of Engineers, or an alternate agency, must be given the affirmative duty to protect and preserve our nation's existing wetlands.

In addition, federal jurisdiction must be broadened to include all activities affecting wetlands, and cumulative impacts of wetlands conversions must be incorporated into wetlands review. It is only through such comprehensive authority and review that a "net gain" national goal can be accomplished.

Furthermore, the Corps has established "nationwide" permits, some of which subvert the intent of section 404 by allowing broad categories of activities with potentially large impacts to occur on a national scale within a framework of permits designed for specific activities with limited impact. No information is available on the impacts of activities on these areas, yet the activities are blindly presumed to be insignificant, both individually and cumulatively.

Finally, it is time to acknowledge that preservation of the nation's wetlands must incorporate acquisition of a portion of privately held wetlands. Congress should create a National Wetlands Fund to raise money for federal acquisition (fee simple or development rights) of wetlands. National Wetlands Fund monies might be raised through taxes on real estate development or other wetlands threatening activities. The purchase of these lands (or their development rights) will prove to be an extremely cost effective investment in the future of the Bay.

E. Toxics

A great deal of attention in the last several years has been placed on nutrient pollution of the Bay. Toxic chemical pollution has been relatively overlooked, partly because the problem is not well understood, partly because the public has long assumed that toxic chemical discharges are regulated already. As we have come to better understand toxics, however, we have come to realize that the latter assumption has no basis in fact. Indeed toxic emissions are rarely regulated: unfortunately, dilution is still the most common solution to toxic waste problems. In only one instance are toxic discharges significantly controlled, i.e., for direct discharges to water through NPDES. Even in this case, only some chemicals are regulated, and only to the extent of existing technology and enforcement.

As a result of many years of unregulated toxic dumping, there have developed "toxic hotspots," notably in Baltimore

Harbor and Elizabeth River. Both illustrate how acute the situation with regard to the past uncontrolled discharges of toxic wastes is. For well over one hundred years, vast quantities of the most toxic chemicals from the industries surrounding these harbors have poured into their waters. The bottom sediments are devoid of all but the most hardy species of worm. In Baltimore, this sediment contains such a "beautiful" distribution of toxics that samples of it are reportedly sold to laboratories around the country to aid in calibrating gas chromatographs.

In addition, recent studies have indicated that the uppermost layer of the Bay, the "microlayer," is also highly contaminated. This microlayer plays an essential role in the development of many species, and the presence of certain toxics may interfere with those processes. Unfortunately, no comprehensive research plan for the Bay exists to ensure that issues such as this are addressed. The toxics strategy to be developed under the new Chesapeake Bay Agreement should include such a plan as one of its key elements.

In order to halt the toxification of the Bay and other vital coastal resources, the federal government must commit itself and the states to identifying all significant sources and pathways of toxic discharge and to identifying the adverse impacts these discharges cause. Eliminating discharges that impair receiving water quality and cleaning-up toxic hotspots that prevent waters from returning to their designated use status must proceed immediately.

In addition, specific measures must be taken to address several broad categories of activities that pose special environmental risks to the Bay and to coastal areas generally.

1. Water Quality Standards for Toxic Discharges

All Chesapeake jurisdictions must strive to expeditiously comply with the 1987 Amendments to the Clean Water Act which call for reducing toxic discharges by identifying waters where the application of "best available technology" will not protect water quality and where additional controls are necessary. Congress showed its concern for toxic pollution and its impatience with existing programs when it enacted these "post-BAT" requirements. In the past, states have been slow to establish water quality standards with numeric criteria for toxic pollutants, and Congress made it clear in the amendments that there can be no more delay. Such standards are an essential element of a comprehensive control program, which should include standards, stringent bio-monitoring requirements and aggressive enforcement against non-compliers.

Bio-monitoring, that is, determining the toxicity of an effluent by its impact on specific aquatic organisms, is an extremely important tool, but it cannot do the job alone. It is most often used to determine acute effects and has serious limitations when used to assess the long-term effects of exposure to low levels of toxics. It does not take into account bio-accumulation in organisms or bio-magnification up the food chain. Nor does it address effects on human health.

While we believe bio-monitoring should be required of all major dischargers, both industrial and municipal, we must also have water quality standards for specific chemicals. At the present time neither Maryland nor Virginia have more than a handful of such standards, but are required by the Clean Water Act amendments to develop them.

We recognize the impossibility of immediately creating standards for all of the thousands of chemicals now in existence, but we can at least begin by focusing on those pollutants already identified by the EPA as posing problems in the Chesapeake Bay. Certainly metals should be targeted, along with compounds which are carcinogenic or which have special risks for aquatic or human life. Standards for toxics in sediments should be developed also.

EPA already has numeric criteria for a number of toxics in saline water, and these criteria are readily adaptable to the Bay's estuarine conditions. The states should move promptly to employ these criteria in establishing state standards. The Bay states should strive to achieve compliance with the Clean Water Act requirements as rapidly as possible, in advance of deadlines if that is feasible.

2. Pesticides

In addition to regulating oil transport in the watershed, it is time to take a much closer look at pesticides. While other toxic discharges are inadvertent, pesticides are intentionally introduced into the environment. As a nation, we literally pour on the ground more than 1.4 billion pounds of pesticides each year. And while we are not certain of the ultimate net effect of this practice, we are beginning to see serious adverse impacts.

For instance, the bald eagle, one of the Chesapeake's most valued and symbolic residents, is dying as a result of pesticide use in the region. Pesticides have also been implicated in the loss of aquatic plants, and have been found in high concentrations in some fish. Moreover, and more ominously, pesticides are now being discovered in our region's drinking water. At last count, at least 9 pesticides including alachlor, atrazine, carbofuran and

metolachlor have been found in the groundwater in the Bay watershed.

Present regulation of pesticide use is not adequately protecting the environment or our drinking water. Comprehensive and aggressive action is needed now to stem the flow of pesticides onto the land and ultimately into the Bay's ecosystem.

The federal government must take steps to increase understanding of pesticide use by mandating collection and dissemination of pesticide use statistics. Also, better training of applicators is needed, as is research and extension on alternatives to chemical pest control. Furthermore, EPA must accelerate its reregistration process, and increase its efforts to fill in health and environmental fate information gaps. In addition, the current system of paying producers for cancelled pesticides must stop.

Finally, Congress and EPA must act decisively, and immediately, to adopt and implement a non-degradation policy for our nation's groundwater resource. It is both unconscionable and unwise to accept progressive contamination of this priceless resource for short-term economic convenience. It is undisputed that the cheapest protection for our groundwater resource is prevention of contamination in the first place. EPA's present groundwater policy encourages creeping contamination and short-sightedness and should be replaced by a true non-degradation policy.

3. Wastewater Pretreatment

Another important area that demands our immediate attention is pretreatment. Thousands of industries are not subject to National Pollutant Discharge Elimination System (NPDES) permits under the Clean Water Act because they discharge, not into water bodies, but into sewers. Unfortunately, municipal sewage treatment plants were never intended to handle the chemical brew which comes from industrial facilities. Consequently, many of these toxics pass through the plants and into our waters, untreated. Indeed, flushing untreated toxics through our sewage treatment plants can interfere with the operation of the plants, ruining their biological processes, corroding equipment, and threatening the health and even lives of plant workers. Toxics also contaminate the sludge produced in the treatment process, making it difficult and costly to dispose of.

Although pretreatment was first mandated by the Clean Water Act in 1972, EPA has been extremely slow to implement the program. Regulations are now in place, however, and those municipalities which must establish pretreatment

programs have been identified and local programs have been approved.

Front line responsibility for implementing the program is placed on the municipality itself, which may often be the least able of the various government entities to do the job. Small municipalities may lack expertise, staff and funding to carry out the complex program effectively. Unless they receive technical support and vigilant supervision from the states and EPA, the entire pretreatment program could be jeopardized.

Maryland is the only Bay state to have been delegated oversight of the program, and it may be premature to judge at this time how well it is doing. CBF is extremely concerned about the pretreatment program and has undertaken a project to review the current status of pretreatment around the Bay, with a report to be published in November. We urge that concerted efforts be made by EPA and the states to ensure that the pretreatment program works as Congress intended.

4. Oil and Gas Transport

Recently, the second largest oil spill in the history of the Chesapeake Bay occurred. The accident, in which over 210,000 gallons of petroleum were dumped into the confined waters of the Chesapeake Bay, is symptomatic of the potentially disastrous situation that surrounds the transport of oil and other hazardous materials on the Chesapeake Bay. Scientific studies have demonstrated that petroleum spilled in the estuary is remarkably persistent, and that the effects of petroleum in an estuary can be catastrophic. Petroleum may be taken up by a variety of fin or shellfish, may destroy zooplankton or phytoplankton, or otherwise adversely affect the environment.

As is readily known by all in the marine industry, the tugboat and barge transportation industry is lightly regulated at best. Tighter licensing procedures are needed, as are more stringent inspection procedures, requirements for state-of-the-art technological devices to monitor loading and transfer operations as well as tank levels while in transit, maximum fines for polluters, and greater surveillance and quick response by the Coast Guard to avoid spills and attendant severe environmental damage.

5. Federal Facilities

Although EPA is the only federal signatory to the 1987 Chesapeake Bay Agreement, numerous federal agencies have a role to play in the Bay cleanup. Already, several agencies including USDA, National Oceanographic and Atmospheric Association, U. S. Fish and Wildlife Service, to name a few,

have played important roles in the process. These agencies exemplify how the federal government can lead by example in restoring the Bay to its productive potential.

Unfortunately, many federal facilities not only do not provide the model for environmentally sound practices, but actually flout federal law, and contribute to the Bay's problems. For example, both the Navy and the Army have been discovered to have callously neglected environmental concerns in handling, storing and disposing of hazardous waste. Moreover, some federal facilities often discharge wastes without permits, while others' permits are so lax as to provide little environmental protection.

As part of the Bay Agreement process, EPA is required to develop and implement a strategy for control of discharges by federal facilities. Unfortunately, this process has been impaired by federal budget constraints.

In order for the federal government to assume a leadership role by example, it must first apply the goals of the Bay Agreement to itself. Thus, the several sewage treatment plants in the watershed operated by the federal government should seek to accomplish at least a 40 percent reduction in nutrient loadings by implementing advanced wastewater treatment. In addition, federal facilities with exotic toxic discharges should go beyond the Clean Water Act requirements, and assess the biological impacts of their toxic discharges and take immediate steps to eliminate adverse impacts. Finally, Congress must provide adequate funding and aggressive oversight in order to send a clear signal that federal facilities non-compliance with the law will not be countenanced.

F. Habitat and Living Resources

1. Federal Funding for Land Acquisitions

It is no longer novel to assert that activities on the land determines the quality of our waters. Ever more concentrated development increases the pressure on our coastal resources by increasing waste loads as well as by literally burying open space and wildlife habitat under shopping malls, highways and housing tracts.

Development pressures are likely to continue to grow in the future. Predictions are that by 1990, 75 percent of the nation's population will live within 50 miles of the shore.

In order to deal with burgeoning growth, the Chesapeake Bay states have begun to seek to manage growth in sensitive areas through precedent-setting legislation such as

Maryland's Critical Areas Law. This law provides for BMP's and limitations on development within 1000 feet of the Bay and its tidal tributaries.

While the states have initiated action to rationalize development, and they are likely to lead future efforts to regulate land-use, the federal government nonetheless has a vital role to play in this issue.

Foremost in its responsibility is the task of providing federal funding for acquisition of environmentally sensitive lands. Revitalizing the Land and Water Conservation Fund is a necessary step toward accomplishing this goal. Legislation to establish an American Heritage Trust, pending in the U.S. House of Representatives would effect this end. The money from such a trust might be allocated partially to federal land management agencies, and partially to state agencies, or even directly to private, non-profit land trusts.

In addition to increasing funding for acquisition of environmentally sensitive lands, the federal government should increase funding for public recreational lands. Wildlife habitat is not the only casualty of encroaching development-- recreational access lands also are depleted as water-front property becomes ever more scarce and expensive.

2. Fisheries

The need for ongoing involvement of the federal government in coastal interjurisdictional fisheries management and research has been clearly demonstrated by events of recent years. The best example is the Chesapeake Bay population of striped bass which migrates through the waters of twelve coastal states and which experienced a 90% decline in landings since the early 1970's. The Atlantic Striped Bass Conservation Act (H.R. 4124) has been the catalyst for cooperative interstate management and effective restoration programs for striped bass during the last four years. It is crucial that this legislation, including extension of federal funding for the Emergency Striped Bass Research Program, be reauthorized in a timely fashion to continue the restoration process.

Fisheries management in federal waters is governed by the Magnuson Fishery Conservation and Management Act, first passed in 1976 and due for reconsideration in the near future. Much was learned during the first ten years under this landmark legislation. In 1986, a blue ribbon panel appointed by NOAA Administrator Dr. Anthony J. Calio assessed this experience and made several very good recommendations. The Panel's most important recommendation concerned separating the conservation and allocation functions of fisheries management. This necessary step would place absolute limits on harvest based on biological

data. We feel that this critical measure should be incorporated into any reauthorization of the Magnuson Act and should be similarly applied to the management of interjurisdictional state fisheries.

There is also a need for a continued federal role in the restoration and maintenance of coastal fisheries habitat. Habitat programs of the National Marine Fisheries Service and the Fish and Wildlife Service should be continued and expanded. In particular, efforts to reopen thousands of miles of coastal tributaries, currently blocked to migratory fish by dams and other obstructions, depend on a continued federal-state partnership. Programs to provide fish passage at the hundreds of obstructions on Chesapeake Bay tributaries will require a commitment of federal expertise in the area of fishery engineering and design. The potential values of restored populations of migratory fish like American shad and blueback herring have been estimated to far outweigh the costs of fish passage programs.

IV. Conclusion

The issues and problems surrounding the Chesapeake Bay restoration Program are numerous and varied. Our testimony today could not possibly touch on all, or even most, of the pressing concerns of citizens and activist who are striving to preserve and protect the Chesapeake Bay. What we have tried to do in our testimony, is highlight significant issues that have a particular and compelling federal component in their resolution.

As our testimony points out, the federal government has a major role to play in virtually every aspect of the Bay clean-up. Whether we are talking about air toxics or wetlands, pretreatment or advanced treatment, the federal government must take an active and leading part, if we are to accomplish our ultimate goal of restoring the Chesapeake Bay to its former majesty and productivity.

In order to facilitate constructive federal involvement in these issues, we hope that Congress will consider our recommendations and heed our advice on the many specific matters raised herein. In addition, Congress and the Administration can generally advance the Bay restoration by providing to the various federal agencies adequate authority and a specific mandate to protect the environment. In the many cases where such authority exists, Congress must press for enforcement of the law. Whether that entails withholding federal subsidies, or empowering citizens to sue, it is imperative to promote and maintain environmental law and order. Finally, Congress and the President must

cease to play the appropriations shell game, where authorizations are passed and appropriations are passed over. It is time to take a stand and pay for a clean environment. Because, buying environmental protection today is certain to be much less costly than paying for environmental clean-up tomorrow.

STATEMENT OF RICHARD N. BURTON
EXECUTIVE DIRECTOR OF THE VIRGINIA WATER CONTROL BOARD
TO THE SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION OF THE
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SEPTEMBER 20, 1988

Good Morning. I am Richard Burton, Executive Director of the Virginia Water Control Board. I also chair the Regional Task Force formed to draft the Water Quality Strategies being developed in response to the 1987 Chesapeake Bay Agreement.

I appreciate the opportunity to speak to you on a topic of special importance to me in my role as Executive Director of the Commonwealth of Virginia's water quality protection agency--the restoration of the Chesapeake Bay.

As several speakers before me have told you, a lot has been done in this regard--and yet a lot remains to be done.

In the sixties and early seventies, national concern about the degradation of our waters led to the passage of the Clean Water Act. This legislation was premised on the fact that no entity alone--not the federal government, not the states, not local governments--could ensure that the necessary programs were implemented to protect water quality. Because of this, Congress fashioned a law that required that the federal government take the lead in setting consistent national policy in this area. At the same time, the law was designed so that states, as they were ready, could take responsibility for water quality protection programs, leaving the federal government in an oversight and policy formulation role. Under this system, the federal government was the primary partner and the states were secondary partners.

It was very much with this philosophy that the Chesapeake Bay cleanup programs were initiated. During the seventies, the Environmental Protection agency initiated studies that laid out the problems that exist in this great Basin. The states were subsequently brought in to help further identify these problems, as well as solutions to them. Again, the federal government had a primary role, and the states, a secondary one.

But now these roles have changed. In the protection of water quality, we no longer have the federal government leading the way and coaxing the states to follow. The states have now emerged as full partners in protecting water quality. No where is this more evident than in the efforts to restore the Chesapeake Bay. Here, Virginia, Maryland, Pennsylvania, and the District of Columbia are working as full partners with the Environmental Protection Agency and other federal departments. Each of us can point to large numbers of policy and budget initiatives that we, individually or collectively, have undertaken in recent years.

And, as Governor Baliles pointed out, we have shown in the 1987 Agreement, and are continuing to show in the Strategies that we are developing in response to the Agreement, that we are willing to broaden that state commitment as further needs are identified.

Although changed, the federal role remains critical to the success of this partnership. Should the federal commitment wane, it will be difficult for the other partners to fully complete the cleanup efforts, which have become more complex and expensive.

What should the federal role be in the future? Basically, it must be comprised of two elements. First, the federal government must continue its commitment to participate financially in portions of the restoration effort. Certain portions of this effort can only be successful under federal leadership. The principal examples are in general water quality research, and in research to set water quality standards.

The second element for which the federal government should continue to bear responsibility is in the setting of consistent national policy guidance on issues like non-point pollution, toxics, and nutrients. This is especially important since we need to ensure that as we initiate new programs and adopt more stringent regulations, industries are not encouraged to relocate to other states and areas where more lax requirements exist.

What I have outlined so far is what I perceive as the changing roles of governmental units involved in the Bay restoration. I would also like to use this opportunity to tell you briefly about some of the progress we have made in implementing the 1987 Agreement, as well as some future needs.

In July, representatives of the Agreement's signatories completed development of a Baywide strategy that will result, by the year 2000, in at least a 40% reduction of the nitrogen and phosphorus entering the Bay. This will be costly. We project expenditures of about \$30 million in Virginia for phosphorus removal, and \$300-600 million dollars for nitrogen removal.

We are still involved in preparation of a toxics reduction strategy, also called for by the Agreement. While it is too early to detail the exact components of the Strategy, it will be built on the toxics control requirements of the 1987 Amendments to the Clean Water Act, and other toxics needs that the partners to the Agreement are able to identify.

I would like to mention here, as an example of the initiatives which States are willing to take, that Virginia recently adopted one of the nation's first comprehensive toxics control regulations. We believe this will allow us to achieve the major toxics control goals of the 1987 Amendments. I would also like to again emphasize the need, as we implement the provisions of these Amendments, for EPA to continue to play a national leadership role in setting standards and ensuring that states minimally meet these standards, so that no state gains economic benefits from allowing pollution.

What outcome do we expect from implementing the provisions of the 1987 Agreement and the strategies developed in response to it? We expect to reverse the trends of recent years, so that we will not see a dying Bay, but rather, one that is coming back to life. The turnaround will not be quick, so those involved in the cleanup efforts must be willing to make a long-term commitment.

In terms of this long-term commitment, you have asked where we will need a stronger federal commitment or presence. There are two areas where I would suggest you focus your attention. First, in recent years, we have uncovered many instances in which federal agencies need to upgrade their facilities for wastewater treatment and disposal. Much of this work will be expensive, and it is necessary that it be funded by Congress in a timely way.

A second matter worthy of your attention concerns the enforcement authority which the states have with respect to federal facilities. The tools we have to deal with federal violations are less numerous and effective than those available to deal with municipal or industrial violations. I believe this shortcoming is worthy of your study, to determine if changes are warranted in the federal law.

In closing, I would like to again thank you for this opportunity to tell you about some of the things we are doing, as well as some of the needs we anticipate, to restore the Chesapeake Bay. While we are dealing with many problems, progress is being made. It is important that we have your support to continue this progress.

Testimony of
ROBERT V. PERCIVAL
University of Maryland
School of Law
on
THE PROGRESS OF PROGRAMS
TO CLEAN UP AND RESTORE
THE CHESAPEAKE BAY
before the
Subcommittee on
Environmental Protection
of the
Senate Committee on
Environment and Public Works
September 20, 1988

Mr. Chairman and Members of the Subcommittee:

My name is Robert V. Percival. I teach environmental law at the University of Maryland School of Law where I am an assistant professor. I also serve as the director of the University of Maryland's Coastal and Environmental Policy Program (CEPP), a joint venture between the Law School, the School of Public Affairs and the Center for Environmental and Estuarine Studies (CEES), which includes the university's Chesapeake research laboratories. I am a member of the university President's Marine Affairs Coordinating Council (PMACC), which is charged with coordinating the university's extensive marine affairs programs. Prior to joining the university in 1987, I served for six years as a senior attorney with the Environmental Defense Fund. Thank you for inviting me to testify.

I. INTRODUCTION

These hearings focus on an enormously important topic. The progress of programs to clean up and restore the Chesapeake Bay is important not only for the Bay itself, but also for environmental protection efforts nationwide. For the success or failure of efforts to "save the Bay" will serve as a significant test of our country's ability to translate extraordinary public support for environmental protection into effective governmental programs.

The far-reaching initiatives that have been undertaken to

save the Chesapeake are well known to this committee. The agreements that have been signed and the programs that have been launched reflect unprecedented public support for protecting the Chesapeake. They represent a kind of "environmental IOU" that must be made good to enhance the credibility of environmental protection efforts nationwide.

In response to the subcommittee's questions I would like to share with you a case study of one group's experience with one important part of the Bay cleanup effort. It involves a dedicated group of students concerned about the problem of toxic pollution in the Bay. This experience provides revealing insights that illustrate important opportunities for improving the progress of efforts to protect the Bay.

II. THE TOXICS CONTROL PROJECT

I joined the law school faculty because my experience as an environmental lawyer convinced me of the importance of developing new, interdisciplinary approaches to environmental problems. I was convinced that the university could play a significant role in this regard by focusing its expertise in science, law and other disciplines on important environmental policy issues. Impressed by the scope of the university's environmental research programs and the desire of students and faculty to participate in the policy process, I agreed to start an environmental program at the law school.

The students in my Environmental Law Clinic last fall closely followed the process of renewal of the Chesapeake Bay

Agreement. They noted that one of the few contentious issues during the renewal process was the question of what to do about toxic pollution in the Bay. It was frequently said that not enough was known about toxic pollution for the Bay Agreement to commit to specific toxic control actions. As a result the new agreement adopted a commitment to develop a baywide toxics control plan by December 1988.

In light of this commitment and the new requirements of the Water Quality Act of 1987, students in the Environmental Law Clinic last January began to study the development of new controls on toxics. When they heard from Maryland officials that not enough was known for the state to develop such controls, the students became determined to find out what is known and what could be done. Realizing that they needed scientific expertise to accomplish this task, the law students recruited graduate students from the University of Maryland's Program in Toxicology. Together the law and toxicology students developed a plan to examine what we do know about toxic pollution and to determine how regulatory priorities could be set.

III. THE WATER QUALITY ACT OF 1987 & THE CHESAPEAKE BAY AGREEMENT

The students soon discovered that the new amendments to the federal Clean Water Act would require the Bay states to undertake significant new initiatives to control toxics. Specifically, the amendments require states (1) to identify all waters impaired by toxics, (2) to apply individual control strategies to sources of toxic pollutants that impair designated uses, and (3) to adopt

numeric water quality criteria for all toxics that may interfere with designated uses.

The new Chesapeake Bay Agreement expressly promises that the basinwide toxics control plan will be consistent with the requirements of the amended Clean Water Act. The Agreement promises:

"to develop, adopt, and begin implementation of a basin-wide strategy to achieve a reduction of toxics consistent with the Water Quality Act of 1987 which will ensure protection of human health and living resources. The strategy will cover both point and nonpoint sources, monitoring protocols, enforcement of pretreatment regulations and methods for dealing with in-place toxic sediments where necessary."

To explore how this commitment could be achieved, the students examined the specific requirements of the Water Quality Act of 1987 and existing data concerning toxic pollutants in Maryland waters.

IV. DEVELOPMENT OF SECTION 304(1) LISTS OF IMPAIRED WATERS

Fundamental to the new controls on toxic pollution mandated by the Water Quality Act of 1987 is the requirement of section 304(1) that states identify waters known or suspected of being impaired by toxic pollution and the sources of such pollution. EPA required the states to submit to it preliminary lists of such waters and sources by April 1, 1988. These preliminary lists were designed to enable EPA and the states to determine what additional information needed to be gathered before submitting the final lists by the statutory deadline of February 4, 1989.

The students discovered that Maryland's initial efforts to

develop the 304(1) lists had gotten off to a promising start. Although staff of the Maryland Department of the Environment (MDE) had discovered that existing water quality data for toxic pollutants was quite limited, they had focused on toxic effluent data in MDE's permit and enforcement files. While there were problems with the quality and completeness of the industrial effluent data, MDE staff otherwise developed a reasonably thorough summary of the Department's existing effluent data on toxic discharges. Using this data, MDE staff initially identified 71 water segments as known or possibly impaired by toxics and 143 dischargers as known or suspected sources of toxics problems.

The purpose of developing preliminary 304(1) lists was to outline the universe of potential toxics problems, which would be refined by gathering additional data. Thus, EPA had directed the states to identify not only known and suspected toxics problems but also areas where current data are inadequate to determine if there are such problems. The states were required to prepare and submit to EPA along with the preliminary 304(1) lists a water quality "assessment plan" describing what additional data collection efforts would be undertaken "to confirm suspected problem waters as known problems, or to determine that no problems exist." The assessment plans were to be implemented prior to the February 4, 1989 deadline for submission of the final 304(1) lists. Water segments or dischargers included on the preliminary 304(1) lists could be eliminated from the final

lists as the results of additional data collection became available.

The students learned, however, that MDE was concerned that the initial lists were too long. Despite EPA's instructions that the lists were preliminary and should include all known or possible toxics problems, MDE determined not to include in the lists to be submitted several water segments and several dischargers identified in its database. MDE missed EPA's April 1 deadline while the agency debated for two months which water segments and dischargers to eliminate from the lists. The Department ultimately deleted more than a dozen water segments and more than sixty dischargers from its preliminary 304(1) lists, which it then submitted to EPA in June.

Although a few dischargers were dropped from the list because additional data conclusively demonstrated that they were not contributing to a toxics problem, others were eliminated on the basis that the data were too uncertain. While this might not have been a problem had MDE developed an assessment plan for resolving data uncertainties, MDE instead indicated that it did not have the resources to implement an assessment plan. The Department did state that it would request all dischargers contributing to a listed water segment to submit additional data. However, MDE sources now indicate that the department has requested such data only from dischargers specifically included on its list.

V. ADOPTION OF WATER QUALITY CRITERIA FOR TOXICS

When MDE's preliminary section 304(1) lists were released in June, some dischargers remaining on the lists complained that it was unfair to include them because they were in compliance with current standards. See, e.g., "13 Waterways, Their Polluters Make State List," Baltimore Sun, June 23, 1988, p. C1. Yet they failed to note that the reason they were in compliance was because Maryland currently has only six water quality standards for toxics, covering only 13 of EPA's 126 priority toxic pollutants.

The Water Quality Act of 1987 is designed to remedy the lack of state standards by requiring states to promulgate water criteria standards for toxics. Section 303(c)(2)(B) requires that:

"Whenever a state reviews water quality standards....(it) shall adopt criteria for all toxic pollutants listed pursuant to section 307(a)(1) of this Act for which criteria have been published under section 304(a), the discharge or presence of which in the affected waters could reasonably be expected to interfere with those designated uses adopted by the state, as necessary to support such designated uses. Such criteria shall be specific numeric criteria for toxic pollutants..."

EPA has published recommended national criteria to protect public health or aquatic life for 99 of the 126 priority pollutants. To date Maryland has promulgated only six water quality standards for toxics and each is less stringent than their respective EPA criteria. Although Maryland currently is completing its triennial review of its water quality standards, it has not proposed any new water quality standards for toxics,

despite the requirements of section 303(c)(2)(B) of the amended Clean Water Act.

Although state officials initially questioned the usefulness of such standards, on July 29, 1988 MDE solicited public comment concerning the development of water quality standards for toxic substances. To assist the state in setting priorities for promulgation of water quality standards, the students engaged in a comprehensive review of existing data on the presence of toxics in Maryland waters. They found that although there were large gaps in data, sufficient data existed to permit the state to identify substances for which water quality criteria should be adopted. The students examined several sources of existing data including:

(1) The original and updated databases compiled by Maryland's Department of the Environment in preparing the lists of state waters impaired by toxic pollutants pursuant to Section 304(1) of the Clean Water Act;

(2) Information on pesticide and herbicide use in Maryland compiled in the Maryland Department of Agriculture's 1985 Pesticide Inventory;

(3) Data on the presence and concentrations of toxic pollutants in ambient waters, sediments, and biota from files maintained by the Maryland Water Management Administration; and

(4) Information on releases of toxic pollutants to Maryland's environment submitted to Maryland's Department of the Environment pursuant to Section 313 of the federal Emergency Planning and Community Right to Know Act.

The students presented their conclusions in testimony at a public hearing on August 26 and in written comments filed last Friday. The students found that the database compiled in preparing Maryland's proposed list of impaired waters pursuant to

Section 304(1) of the Clean Water Act revealed that thirty-eight toxic pollutants were discharged or present in Maryland waters at levels in excess of EPA criteria. These include the following:

Lead	Cyanide	Alachlor
Zinc	PCB	alpha BHC
Selenium	PCE	ammonia
Iron	TCE	chlordane
Mercury	Phenol	benzene
Thallium	Tributyltin	PCP
Cadmium	Phthalate esters	
Chromium	1,1,2,2 TCA	
Copper	Chloroform	
Aluminum	1,2 DCA	
Arsenic	1,1 DCE	
Barium	DEHP	
Beryllium	Dieldrin	
Silver	Chloromethane	
Nickel	Metalochlor	

The students also looked at several sources of data that had not been considered by the state in developing its 304(1) list. The Maryland Department of Agriculture's 1985 Pesticide Inventory estimated that the following thirty-two pesticides were applied in Maryland at rates exceeding 50,000 pounds annually:

alachlor	butylate	EPTC
atrazine	captan	glyphosphate
chlordane	carbaryl	maleic hydrazide
heptachlor	chlorothalonel	mancozeb
linuron	chlorpyrifos	naptalam
malathion	cyanazine	paraquat
toxaphene	diazinon	pendimethalin
trifluralin	dicamba	simazine
acifluorfen	dinoseb	sulfur
bensulfide	dioxine	terbufos
vortex		

The students concluded that priorities for setting water quality standards for these substances could be established based on consideration of the water solubility of the pesticide compound, the persistence of the pesticide compound, the

likelihood of bioconcentration, and the acute and chronic toxic effects of the pesticide compound. They determined that particular attention should be paid to the organochlorine pesticide compounds for which Maryland does not currently have numeric criteria.

The students also reviewed and summarized existing data on pesticide concentrations in finfish and shellfish. They concluded that pesticides identified as present in aquatic biota should be among the substances determined to be priorities for promulgating water quality standards.

Another source of data that had not been available when the state developed its 304(1) lists was information on releases of toxic chemicals filed pursuant to Section 313 of the federal Emergency Planning and Community Right to Know Act. Enacted as part of Title III of the Superfund Amendments and Reauthorization Act of 1986, section 313 requires larger industrial facilities to report annually the quantities of 329 toxic chemicals released to any environmental medium.

These reports provide an important new source of information on toxic discharges. The students found that the reports were particularly useful in assessing the magnitude of previously unreported toxic releases to the atmosphere and to public sewers as well as information on direct releases of toxic chemicals to Maryland waters. Based upon information about discharges to waters and public sewers, the students nominated the following additional substances as candidates for the adoption of water

quality criteria:

acetone
ethylene glycol
n-butyl alcohol
catechol
titanium oxide
vinyl acetate
2-nitrophenol
methylene monoxide
methanol

VI. CONCLUSIONS

The students' toxics control project is continuing this fall and broadening its focus to develop recommendations for the basinwide toxics control plan being developed pursuant to the new Chesapeake Bay Agreement. Their recommendations will be released next month in Richmond at the toxics conference sponsored by the Alliance for the Chesapeake Bay. But the students' experience to date provides some useful lessons concerning how to improve state and federal efforts to protect the Bay.

First, their experience does not show that the states are unable or unwilling to adopt aggressive measures to control toxics. Rather it confirms that when state agencies with limited resources are confronted by enormously complex and demanding new requirements, they behave as most normal people would - by basically trying to get by. Thus, additional activities recommended or encouraged by EPA guidance (e.g., consulting additional sources of information in developing the 304(1) lists, soliciting public comment on the draft 304(1) lists, or developing an assessment plan for gathering additional data) are

more likely to be undertaken by state agencies only if they are perceived as absolutely necessary and only if the agencies obtain the additional resources to perform them.

Second, the process for developing a basinwide toxics control plan for the Bay should be used as an opportunity to stimulate the states to perform the duties mandated by the Water Quality Act of 1987 in a coordinated fashion. Thus, the basinwide toxics control plan should require that consistent baywide criteria be promulgated for all toxics identified as impairing the waters of the Bay. It is critical that the establishment of these standards not be limited simply to EPA's list of priority pollutants. The Water Quality Task Group chaired by Richard Burton has made a useful start in developing its draft Basinwide Toxics Reduction Strategy. But this strategy must do far more than simply describe the existing toxic control programs of the individual states. It also needs to establish a mechanism to ensure that the Bay states adopt consistent criteria for all toxics impairing Bay waters.

Third, successful implementation of the Act's water quality provisions can only be accomplished if the Bay states focus on all sources of toxics entering Bay waters. In the past, an almost exclusive focus on direct point source discharges of toxic pollutants has ignored other important sources of toxics. While it is essential that the states incorporate water quality based effluent limits into the permits issued to direct dischargers, we can not afford to ignore other sources of toxic contaminants,

including atmospheric releases of toxic pollutants, pesticide runoff, in-place pollutants, and the indirect discharges of toxic chemicals to our waters as a consequence of inadequate pretreatment. The Bay Agreement promises to develop a comprehensive toxics control plan. Thus, in addition to developing the toxics loading inventory recommended in the current draft of the Basinwide Toxics Reduction Strategy, the strategy should establish a mechanism for ensuring that coordinated controls are developed for sources other than direct dischargers.

Fourth, substantial additional monitoring for toxics needs to be conducted in a coordinated fashion. As the students' study showed, there is more than enough data to warrant concern about certain toxics in the Bay. But the existing databases must be substantially upgraded to ensure that our control programs do not miss other serious problems. Consistent monitoring requirements need to be established for dischargers. The students found that data on toxic discharges were currently available for only 13 percent of Maryland's 822 dischargers and only 5 percent of the state's publicly-owned treatment works. Virginia recently has revised its monitoring requirements and Maryland also should do so. The students recommended that Maryland require priority pollutant scans for any effluent where there is a reasonable basis for suspecting the presence of a toxic contaminant.

Additional resources need to be devoted to water quality monitoring. A program of seasonal sampling of waters known or

suspected of being impaired by toxics should be conducted throughout the region in a coordinated fashion. Information on the presence of toxic pollutants in finfish and shellfish tissue needs to be supplemented to assist in regulating those pollutants for which bioaccumulation is a likely problem.

Fifth, our methods for detecting and measuring the toxic effects of pollutants need to keep pace with developing scientific knowledge. Application of existing numeric criteria will not, by itself, assure the protection of aquatic biota. Additional methods should be employed to assess the impact of toxic discharges on indigenous aquatic life.

Current biomonitoring programs employed in Maryland and other Bay states are a step in the right direction. The results of recently completed bioassays have helped MDE identify dischargers with effluent acutely toxic to aquatic organisms. These facilities are being required to take steps that will reduce the acute toxicity of their effluents.

In the long run, however, the Bay states need to adopt more sophisticated methods of toxic impact monitoring that will better protect aquatic life from the chronic effects of toxic pollutants. Short term subchronic biomonitoring efforts currently underway are a beginning. To detect potential threats to the integrity of Chesapeake waters, the impacts of toxic pollutants on aquatic life must be detected at an early stage. Thus current biomonitoring methods should be examined to determine how they could be improved by using developing "biological indicator"

testing methods to detect the cellular level impacts of toxic contaminants at low dose levels and in mixture situations.¹ These methods offer the potential for providing an "early warning" of adverse impacts that will allow regulation to be preventive rather than simply reacting to problems after serious damage has been done.

These recommendations do not require new legislation. Rather they require only more aggressive implementation of existing authorities and the allocation of sufficient resources to see that this is done. By holding these hearings this committee has indicated that it realizes the importance of this task. All of us must work together to transform the Bay Agreement's "environmental IOU" into environmental results.

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- ¹ Examples of possible biological indicators include:
- (1) changes in fish steroid hormone biosynthesis;
 - (2) changes in adenylate energy charge;
 - (3) detection of lysosomal membrane integrity, (indicative of organic compound uptake);
 - (4) detection of specific mixed function oxidase isozymes, (indicative of exposure to particular classes of organics);
 - (5) chemical-specific changes in heme metabolism and urinary porphyrin excretion patterns;
 - (6) determination of heavy metal binding proteins and mineral concretion metal composition and the ratio of these compartments to the composition metalloenzyme pool; and
 - (7) chemical induced changes in gene expression resulting in specific "stress protein" induction patterns which may be used to "fingerprint" low level genetic responses to specific toxicants.

**CONTROLLING
TOXIC POLLUTANTS IN
MARYLAND WATERS:
RECOMMENDATIONS FOR
IMPLEMENTING THE
CLEAN WATER ACT'S
WATER QUALITY
STANDARDS PROVISIONS**

**University of Maryland
Program in Toxicology
and
Environmental Law Clinic**

**Presented to the
Maryland Department of the Environment**

September 16, 1988

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INTRODUCTION

On July 29th 1988 the Maryland Department of the Environment published a notice in the Maryland Register soliciting public comment concerning the development of water quality standards for toxic substances. Specifically, public comment was sought to assist the Department in determining:

- (1) Which toxic substances should be regulated, the types of criteria that should be established, and whether those criteria should be applied statewide or only to selected bodies of water.
- (2) Whether provisions establishing mixing zones for toxic pollutants should be adopted as part of Maryland's water quality standards regulations;
- (3) The extent to which water bodies should be protected as drinking water supplies; and
- (4) The propriety of establishing a procedure that would allow variances for individual dischargers from permit conditions necessary to the achievement of water quality standards.

These comments are submitted jointly by the University of Maryland Program in Toxicology and the University of Maryland Environmental Law Clinic. The University of Maryland Program in Toxicology is a university-wide program directed by Dr. Bruce Fowler, professor of pathology in the School of Medicine. It offers students an opportunity for multidisciplinary training in a variety of specialties including aquatic toxicology.

The Environmental Law Clinic is part of the University of Maryland's Coastal and Environmental Policy Program, established in 1987 by the School of Law, the Center for Environmental and Estuarine Studies, and the School of Public Affairs. The program involves faculty and students from the three schools in interdisciplinary research, education and public service on environmental policy issues. The Environmental Law Clinic, which is part of the Law School's extensive clinical law offerings, enables law students to collaborate with scientists and other professional on projects to enhance environmental protection.

I. INTRODUCTION: TOXIC POLLUTANTS AND THE 1987 CLEAN WATER ACT AMENDMENTS

Toxic pollutants enter Maryland waters from a multitude of sources: industrial discharges, publicly-owned treatment plants, leachate from landfills, urban storm water runoff, agricultural runoff, and atmospheric deposition.

In 1972, Congress declared a national policy prohibiting the discharge of "toxic pollutants in toxic amounts." Yet this has remained an elusive goal because of enormous difficulties in identifying and regulating sources of toxic pollutants.

In recognition of this problem, Congress amended the Clean Water Act in January 1987 to require states to undertake major new initiatives to control toxics. States must identify all waters affected by toxics and apply individual control strategies to sources of such pollutants. Last December Maryland joined its neighbor states in signing a new Chesapeake Bay Agreement that promises to adopt by

December 1988 a comprehensive strategy for reducing toxic water pollution in line with the new requirements of the Clean Water Act.

EPA has identified 126 priority toxic pollutants and has published recommended national criteria to protect public health and aquatic life from exposure to some of these. EPA's criteria are presented in Appendix 9 for toxic pollutants discharged or present in Maryland waters. To date Maryland has promulgated water quality standards for only six toxic pollutants.

In order to assure progress in the attainment of the Clean Water Act's water quality goals, in 1987 Congress amended the Act's provisions dealing with the establishment of state water quality standards for toxic pollutants. As amended, Section 303(c)(2)(B) of the Act requires that:

"Whenever a state reviews water quality standards....(it) shall adopt criteria for all toxic pollutants listed pursuant to section 307(a)(1) of this Act for which criteria have been published under section 304(a), the discharge or presence of which in the affected waters could reasonably be expected to interfere with those designated uses adopted by the state, as necessary to support such designated uses. Such criteria shall be specific numeric criteria for toxic pollutants..."

Maryland is currently in the process of reviewing its water quality standards and, as a consequence, must comply with the new requirements of section 303(c)(2)(B). We hope that the information provided in this report will assist the state in this endeavor.

II. THE DEPARTMENT SHOULD ADOPT STATEWIDE NUMERIC STANDARDS FOR TOXIC POLLUTANTS THAT CAN BE REASONABLY EXPECTED TO INTERFERE WITH THE DESIGNATED USES OF MARYLAND WATERS

In implementing the requirements of section 303(c)(2)(B) the Department must decide initially whether it should adopt statewide numeric standards for toxic pollutants, or opt instead for criteria that apply only to certain water bodies. We recommend that the Department adopt statewide numeric water quality standards for those toxic pollutants that, based upon information currently available, can be reasonably expected to interfere with the designated uses of state waters. In the sections of this report that follow we examine the existing data in an attempt to assist the Department in identifying those pollutants for which numeric standards should be established. We believe that the adoption of statewide standards offers the most straight forward means of implementing the Clean Water Act's water quality standards provisions.

It should be recognized from the outset that the realization of the Act's water quality goals will require an ongoing commitment from the states. For this reason we make additional recommendations in this report with respect to future monitoring needs and the relationship between numeric water quality standards provisions and programs aimed at assessing the biotoxicity of industrial and municipal effluent.

In addition we take note of the fact that the successful implementation of the Act's water quality provisions can only be accomplished if we focus on all sources of toxics entering state waters. In the past we have unwisely focused almost exclusively on direct point source discharges of toxic pollutants. While it is essential that the states incorporate water quality based effluent limits into the permits issued to direct dischargers, we can not afford to ignore other sources of toxic contaminants, including atmospheric releases of toxic pollutants, pesticide runoff, in place pollutants, and the indirect discharges of toxic

chemicals to our waters as a consequence of inadequate pretreatment. Only by addressing all sources of toxic contamination can we hope to achieve water quality goals.

III. TOXICS IN CHESAPEAKE BAY: A REVIEW OF EXISTING INFORMATION

In its draft "Guidance For State Implementation Of Water Quality Standards", the Environmental Protection Agency encourages the states to use the following sources of information in assessing the need for numeric toxics criteria: (1) ambient water monitoring data, including those for sediment and aquatic life; (2) NPDES permit applications and permittee self-monitoring reports; (3) effluent guideline development documents, many of which contain section 307(a)(1) priority pollutant scans; (4) pesticide and herbicide application information and other records of pesticide and herbicide inventories; (5) public water supply source monitoring data noting pollutants with Maximum Contaminant Levels (MCLs); and (6) any other relevant information on toxic pollutants collected by Federal, State, interstate agencies, academic groups, or scientific organizations. We encourage Maryland to follow EPA's recommendation and review all readily available data in determining the need for water quality standards for toxic pollutants. To assist the state in this endeavor, University of Maryland students have reviewed and compiled information on toxic pollutants in Maryland waters from the following sources:

(1) Data compiled by Maryland's Department of the Environment in preparing a list of state waters impaired by toxic pollutants pursuant to Section 304(l) of the Clean Water Act;

(2) Information on pesticide and herbicide use in Maryland compiled in the Department of Agriculture's 1985 Pesticide Inventory;

(3) Data on the presence and concentrations of toxic pollutants in ambient waters, sediments, and biota from files maintained by the Maryland Water Management Administration; and

(4) Information on releases of toxic pollutants to Maryland's environment submitted to Maryland's Department of the Environment pursuant to Section 313 of the federal Emergency Planning and Community Right to Know Act.

The information contained in these data bases has been organized in the appendices that accompany this report. Based upon this information we make the following recommendations.

IV. THE DEPARTMENT SHOULD ADOPT NUMERIC WATER QUALITY CRITERIA FOR TOXIC POLLUTANTS IDENTIFIED IN MARYLAND WATERS AT LEVELS IN EXCESS OF EPA QUALITY CRITERIA FOR WATER

In the data base compiled by the Department in preparing its proposed list of impaired waters pursuant to Section 304(l) of the Clean Water Act, the thirty-eight toxic pollutants listed below were identified to be discharged or present in Maryland waters at levels in excess of EPA criteria:

Lead	Cyanide	Alachlor
Zinc	PCB	alpha BHC
Selenium	PCE	ammonia
Iron	TCE	chlordan
Mercury	Phenol	benzene

Thallium	Tributyltin	PCP
Cadmium	Phthalate esters	
Chromium	1,1,2,2 TCA	
Copper	Chloroform	
Aluminum	1,2 DCA	
Arsenic	1,1 DCE	
Barium	DEHP	
Beryllium	Dieldrin	
Silver	Chloromethane	
Nickel	Metalochlor	

We believe that these pollutants can be reasonably expected to interfere with the designated uses of state waters. We recommend that numeric criteria be adopted for the toxic pollutants listed above, for which EPA has adopted recommended national criteria, during the current triennial review of water quality standards.

V. THE DEPARTMENT SHOULD CONSIDER THE NEED TO ADOPT NUMERIC CRITERIA FOR COMMONLY USED PESTICIDES KNOWN TO BE TOXIC OR PERSISTENT

The Department of Agriculture's 1985 Pesticide Inventory estimated that the following thirty-two pesticides were applied in Maryland at rates exceeding 50,000 pounds annually:

alachlor	butylate	EPTC
atrazine	captan	glyphosphate
chlordane	carbaryl	maleic hydrazide
heptachlor	chlorothalonel	mancozeb
linuron	chlorpyrifos	naptalam
malathion	cyanazine	paraquat
toxaphene	diazinon	pendimethalin
trifluralin	dicamba	simazine
acifluorfen	dinoseb	sulfur
bensulfide	dioxine	terbufos
vortex		

In assessing the need to adopt numeric criteria for these pesticides, the state should consider the following factors: (1) the water solubility of the pesticide compound; (2) the persistence of the pesticide compound; (3) the likelihood of bioconcentration; and (4) the acute and chronic toxic effects of the pesticide compound. Particular attention is warranted in the case of organochlorine pesticide compounds for which the state does not currently have numeric criteria.

In addition the Department should review existing data on pesticide concentrations in finfish and shellfish. The current availability of information on some of the toxic contaminants occurring in Maryland finfish and shellfish is presented in Appendix 6. Priority consideration of the need for numeric criteria should be given for pesticides identified as present in aquatic biota.

VI. THE DEPARTMENT SHOULD ASSESS THE NEED TO ADOPT NUMERIC CRITERIA FOR OTHER POLLUTANTS COMMONLY RELEASED TO MARYLAND'S ENVIRONMENT

We urge the Department to consider information on releases of toxic chemicals recently filed pursuant to Section 313 of the federal Emergency Planning and Community Right to Know Act (EPCRA) in assessing the need for numeric toxic criteria. Section 313 of EPCRA requires Maryland's larger industrial facilities to file forms annually that provide information on the quantity of toxic chemicals released to any environmental media. The list of toxic chemicals subject to the reporting requirements is composed of 329 entries.

Annual EPCRA reports provide an important means of supplementing otherwise available information on toxic discharges. They are particularly useful in assessing the magnitude of toxic releases to the atmosphere. A recent report published by the Natural Resources Defense Council reviews recently filed information on atmospheric releases of toxics in Maryland. We have attached a copy of the NRDC report to our comments and ask that it be incorporated into the record. We recommend that the Department consider the need to adopt numeric water quality criteria for toxic chemicals released in significant quantities to Maryland's atmosphere.

The EPCRA reports also contain information on direct releases of toxic chemicals to Maryland waters as well as data on indirect releases of toxics to publicly owned treatment works. Based upon this information we recommend that the Department consider the need to adopt numeric criteria for the following toxic pollutants if the Department determines that they are likely to impair the designated uses of Maryland waters:

- acetone
- ethylene glycol
- n-butyl alcohol
- catechol
- titanium oxide
- vinyl acetate
- 2-nitrophenol
- methylene monoxide
- methanol

As a final note, we recommend that the Department use information from the EPCRA reports to supplement the proposed list of impaired waters filed pursuant to Section 304(l) of the Clean Water Act.

VII. THE DEPARTMENT SHOULD TAKE STEPS TO SUPPLEMENT EXISTING INFORMATION ON THE PRESENCE OF TOXIC POLLUTANTS IN MARYLAND WATERS

The current paucity of data on the presence of toxic contaminants in Maryland's waters, sediments, and biota is troubling. Comprehensive information on the presence of toxic pollutants is a prerequisite to the formulation of a reasoned and effective toxics strategy. Efforts to supplement the currently inadequate data base on toxic contaminants should be a Departmental priority of the first order.

Appendices 2 through 6 to this report summarize data currently available in Departmental files

on the presence or discharge of toxic contaminants in Maryland waters. We recommend that the following steps be taken to supplement this information:

(1) Information on the presence of toxic priority pollutants in industrial and municipal wastewater treatment plant effluent needs to be supplemented. Priority pollutant scans should be performed in the case of any effluent where there is a reasonable basis for suspecting the presence of a toxic contaminant.

(2) Ambient water toxics data is seriously inadequate, particularly in the case of organic toxic pollutants. Priority data needs should be satisfied first. Specifically, we recommend that initial efforts be focussed on those waters identified in the Departments Section 304(l) data base. In addition, it makes sense to focus monitoring efforts on those toxic pollutants most likely to pose a threat to water quality, including but not limited to the toxic contaminants listed in headings A through C above.

(3) Information on the presence of toxic pollutants in finfish and shellfish tissue also needs to be supplemented. Particular attention should be paid to those pollutants for which bioaccumulation is a likely problem and to pesticides and other contaminants released in significant quantities to the environment.

VIII. THE DEPARTMENT SHOULD EXERCISE CAUTION IN ESTABLISHING VARIANCE PROCEDURES FOR TOXIC POLLUTANTS

In its request for comments the Department solicits public input on the propriety of establishing a variance procedure for discharges that violate water quality criteria established for toxic pollutants. It is our opinion that the establishment of a procedure aimed at providing state variances for individual permittees from water quality based permit limits would be inconsistent with the plain language of the Clean Water Act.

Environmental Protection Agency regulations do, however, provide authority for changes in the designated use of a water body if certain criteria are met. Specifically, 40 CFR 131.10(g) provides that:

"States may remove a designated use that is not an existing use....if the State can demonstrate that attaining the designated use is not feasible because:

- (1) Naturally occurring pollutant concentrations prevent the attainment of the use; or
- (2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met; or
- (3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
- (4) Dams, diversions or other types of hydrologic modifications preclude attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or

(5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

(6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact..."

We believe that public policy considerations warrant restraint in the application of this regulation. First, we do not believe that it would be appropriate to reduce the designated use of a state water body below the interim goal established by Congress in Section 101(a)(2) of the Clean Water Act. That section establishes as a national goal the attainment of water quality levels that will "provide(s) for the protection and propagation of fish, shellfish, and wildlife and provide(s) for recreation in or on the water..." The attainment of this national goal should be reflected in the designated uses adopted for state waters. It should be noted that the adoption of designated uses that are inconsistent with this national goal would be contrary to the recently signed Chesapeake Bay Agreement, which calls for "the restoration and protection of the living resources, their habitats and ecological relationships." In summary, we believe that at a minimum the designated uses established by the state should assure the attainment of "fishable and swimmable waters".

Environmental Protection Agency regulations and guidance place additional restrictions on a state's authority to diminish the designated uses of water bodies. The preamble of EPA's regulation stipulates that only widespread economic and social impact can be used as the basis for granting a variance. The possibility that the imposition of water quality based permit limits will result in economic hardship for individual dischargers is therefore not an adequate basis for a variance. Secondly it should be noted that in no case may a variance be granted that would result in the diminishment of an existing use for a water body. Finally, existing EPA guidance provides that variances may not be granted for a period exceeding three years.

IX. MIXING ZONE REGULATIONS FOR TOXIC POLLUTANTS SHOULD BE NARROWLY DRAFTED TO ASSURE THE PROTECTION OF AQUATIC LIFE

Pollution discharge permits in some cases allow dischargers to exceed water quality criteria at the point of discharge, on the assumption that the effluent will mix with the less polluted waters and achieve the water quality criteria downstream. The rationale is that a small area of degradation can exist without causing adverse effects to the waterbody as a whole. The portion of the receiving waterway where the water quality criteria may be exceeded is called the mixing zone. Maryland does not currently allow the establishment of mixing zones for toxic pollutants. We recognize that there are instances in which the establishment of such mixing zones would not result in significant adverse impacts on the integrity of Maryland waters. However, the peculiar characteristics of estuarine waters warrant special caution in the creation of mixing zones for toxic contaminants.

To determine the appropriate mixing zone in an estuary, the following critical design conditions should be used:

1) In an unstratified estuary the critical dilution condition includes a combination of low water slack at spring tide for the estuary and design low flow for riverine inflow;

2) If there is stratification, a site specific analysis of a period of minimum stratification and a period of maximum stratification, both at low water slack, must be made to evaluate which one results in the lowest dilution.

In addition, an analysis of mixing during the period of maximum velocity during the tidal cycle should be performed. This will indicate the longest extension of the pollutant plume.

For conventional pollutants, the assumption of completely mixed conditions may be acceptable since generally conventional pollutants will have the greatest impact well downstream of the discharge point. Toxic pollutants, on the other hand, will usually have the greatest impact close to the point of discharge. For this reason site specific mixing zone analyses should be performed to determine the appropriate mixing zones for toxic pollutants.

Generally speaking, EPA policy prohibits the presence of pollutants in a mixing zone at levels that would cause acute toxicity to aquatic life. There are two approaches that the state can take to prevent lethal conditions in the regulatory mixing zone. First, the state can prohibit lethal concentrations of toxic pollutants in the discharge itself, (i.e. apply acute water quality criteria as permit limits at the end of the pipe.) Secondly, the state could require the installation of high rate diffusers and criterion maximum concentration compliance within a short distance of the outfall. The former approach should be applied in Maryland's estuarine waters because water depths are typically shallow and mixing is generally incomplete.

Allowing dischargers to exceed water quality criteria within designated mixing zones would be inappropriate where there is in fact little or no mixing, or where tidal or estuarine effects would allow high concentrations to persist over a significant period of time. These concerns are particularly significant for pollutants that either bioaccumulate or become trapped in the bottom sediment. The validity of the mixing zone approach is premised upon rapid dilution and dispersal of the pollutants; where this cannot be assured during all seasons and times of day, water quality criteria should not be exceeded.

Even though mixing zones for toxic pollutants may be acceptable in some instances, there are cases in which mixing zones may be inappropriate: 1) in the case of bioaccumulative pollutants, 2) in cases where an effluent is known or suspected to attract fish (studies indicate that some priority pollutants elicit attractive responses in some fish species), 3) in areas designated as critical resource areas, (e.g. spawning areas.) In these and similar instances the Department should carefully examine all alternatives before permitting the establishment of mixing zones.

For all of the above mentioned reasons we urge the Department to adopt a conservative approach in the adoption of mixing zone regulations for toxic contaminants.

X. DEPARTMENTAL EFFORTS TO IMPLEMENT NUMERIC WATER QUALITY CRITERIA SHOULD BE INTEGRATED WITH OTHER PROGRAMS AIMED AT ASSESSING THE IMPACT OF TOXIC POLLUTANTS ON AQUATIC LIFE

The application of numeric criteria will not, by itself, assure the protection of aquatic biota. Criteria are simply not available at this time for many pollutants that pose a potential threat to Maryland waters. In addition, the application of individual numeric criteria does not take into account the potential

additive or synergistic effects of pollutant mixtures. Additional methods should be employed to assess the impact of toxic discharges on indigenous aquatic life.

The Department's current toxicity testing program is a step in the right direction. The results of recently completed bioassays have helped the Department identify dischargers with effluent acutely toxic to aquatic organisms. These facilities are being required to take steps that will reduce effluent toxicity.

In the long run, however, the Department needs to adopt more sophisticated methods of toxic impact monitoring that will better protect aquatic life from the chronic effects of toxic pollutants. Short term subchronic biomonitoring efforts currently underway are a beginning. To detect potential threats to the integrity of Maryland waters, the impacts of toxic pollutants on aquatic life must be detected at an early stage. We recommend that the Department establish a task force to examine current biomonitoring efforts and make recommendations for short term and long term improvements. In particular, the task force should consider the utility of "biological indicator" testing methods designed to detect the cellular level impacts of toxic contaminants at low dose levels and in mixture situations. Examples of possible indicators that should be examined are:

- (1) changes in fish steroid hormone biosynthesis;
- (2) changes in adenylate energy charge;
- (3) detection of lysosomal membrane integrity, (indicative of organic compound uptake);
- (4) detection of specific mixed function oxidase isozymes, (indicative of exposure to particular classes of organics);
- (5) chemical-specific changes in heme metabolism and urinary porphyrin excretion patterns;
- (6) determination of heavy metal binding proteins and mineral concretion metal composition and the ratio of these compartments to the composition metalloenzyme pool; and
- (7) chemical induced changes in gene expression resulting in specific "stress protein" induction patterns which may be used to "fingerprint" low level genetic responses to specific toxicants.

The above mentioned indicators should be evaluated in relation to normal patterns of changes resulting from seasonal responses, reproductive cycles, or genetic variation in the species selected for study.

In addition, the Department should consider using currently available information on benthic community structure to establish watershed priorities for toxic remedial efforts. The availability of benthic community data for Maryland waters is summarized in Appendix 10.

CONCLUSION

We thank the Department for the opportunity to comment on these important issues. We believe that the Department's diligence in implementing the water quality standards provisions of the Clean

Water Act will determine, in large measure, the overall effectiveness of the state's strategy for reducing toxic water pollution. It is important, we think, for the Department to make use of all the resources at its disposal in the development of this strategy. To this end, the University of Maryland looks forward to assisting the Department in the development of a truly comprehensive toxics strategy.

Statement of Milton J. Hertz
 Administrator, Agricultural Stabilization and Conservation Service
 U.S. Department of Agriculture
 before the
 Committee on Environment and Public Works
 Subcommittee on Environmental Protection
 U.S. Senate
 September 1988

Mr. Chairman and Members of the Subcommittee, I appreciate the opportunity to testify before your Subcommittee regarding the Agricultural Stabilization and Conservation Service (ASCS) program activities relative to the Chesapeake Bay.

Subsequent to the adoption of the 1987 Chesapeake Bay Agreement, ASCS has entered into a Memorandum of Understanding with the Environmental Protection Agency (EPA) concerning the Chesapeake Bay. ASCS administers several land treatment programs that provide water quality benefits that significantly improve impaired water quality resulting from agricultural nonpoint sources of pollution. These programs also protect as well as prevent or lessen the degradation of water quality.

Memorandum of Understanding

The Memorandum of Understanding (MOU) establishes policies and administrative procedures that provide a continuing cooperative working relationship between the EPA and the ASCS in support of common goals, interest and statutory requirements as they relate to the implementation of the 1987 Chesapeake Bay Agreement. It supplements the MOU between the Department of Agriculture and the EPA, dated October 3, 1984. It encompasses, where allowed by statute, the administering of ASCS programs, sharing information, and jointly undertaking projects that will facilitate the implementation of the Chesapeake Bay Agreement.

Agricultural Conservation Program (ACP)

The purpose of the ACP is to provide cost-sharing to agricultural landowners and operators for installing conservation practices to protect the soil and reduce water, air, or land pollution from agricultural or silvicultural nonpoint sources. This program is nationwide in scope and dates prior to the Clean Water Act Amendments of 1987 and the December 1987 Chesapeake Bay Agreement. The FY 1988 appropriation for this program was \$176,935,000. Of this amount, the annual allocation for the Bay states is \$14,724,000. In Fiscal Year 1988, \$8,000,000 was reserved and allocated to specific states for special water quality projects. Special water projects funding for the following Bay states was: Maryland, \$174,000; Pennsylvania, \$20,000; New York, \$145,000; Virginia, \$87,000; and West Virginia, \$1,031,000. This is in addition to their regular annual appropriations.

Rural Clean Water Program (RCWP)

The RCWP is an experimental water quality program with 20 projects representing 11 of the 20 major resource areas throughout the nation. The RCWP is administered in consultation with Environmental Protection Agency. Three of these projects are in the Chesapeake Bay Basin. The Double Pipe Creek, the Conestoga Headwaters, and the Mansemond-Chuckatuck RCWP projects are located in Maryland, Pennsylvania, and Virginia respectively and were specifically selected because of their importance to the Chesapeake Bay. The objectives of the RCWP are to: (1) improve impaired water use and quality in the approved project area in the most cost-effective manner possible in keeping with the provision of adequate supplies of food, fiber, and a

quality environment; (2) assist agricultural land owners and operators to reduce agricultural nonpoint source water pollutants and to improve water quality in rural areas to meet water quality standards and water quality goals; and (3) develop and test programs, policies and procedures for the control of agricultural nonpoint source pollution. The RCWP is authorized and funded by the Agriculture, Rural Development and Related Agencies Appropriations Act, Fiscal Years (FY) 1980 and 1981, although it originated under the Clean Water Act in the 1970's. Fifty million dollars was appropriated in FY 1980 and \$20 million in FY 1981. About \$64 million will be spent on these projects. The Conestoga Headwaters project was selected as 1 of 5 projects in the nation to comprehensively monitor and evaluate the effectiveness of the program and the Best Management Practices (BMP's) installed by the landowners and operators. Total appropriations to these projects is \$10,690,624. These projects are still actively installing BMP's under 3 to 10 year contracts with landowners and operators. Final evaluation of the program will be completed in 1990. Some of the experiences of the RCWP have been carried over into the Chesapeake Bay Program.

Conservation Reserve Program (CRP)

The CRP is authorized by the Food Security Act of 1985. The objectives of the CRP are: (1) reduce water and wind erosion, (2) protect our long-term capability to produce food and fiber, (3) reduce sedimentation, (4) improve water quality, (5) create better habitat for fish and wildlife through improved food and cover, (6) curb production of surplus commodities, and (7) provide needed income support for farmers. This program encourages farmers to

solve water quality problems caused by excessive erosion on highly erodible cropland by offering 10-year contracts that provide for both cost-share assistance for permanent cover establishment of trees, grass, or filter strips and annual rental payments for retiring the land from production of agricultural commodities. In addition to reducing erosion on highly erodible cropland, other benefits are realized through CRP including water quality, wildlife enhancement, and production adjustment. To date over 28 million acres have been contracted with two years remaining to reach the 40-45 million acre goal. In Fiscal Year 1988, bid pool boundaries were changed and maximum acceptable annual rental rates were increased in some areas, including increases to encourage higher CRP participation in counties adjacent to the Bay.

The Secretary of Agriculture has encouraged and is working closely with State and local entities in implementing "piggy back" programs that compliment the CRP effort. Each of the Bay states has either developed a State funded program or is in the process of doing so. Recently the CRP was expanded to include non highly erodible filter strip areas that reduce erosion for the primary purpose of enhancing water quality. The state of Maryland has offered an additional \$20 per acre annual rental to farmers contracting filter-strips in the CRP. During the February 1988 signup, 538 acres of filter-strips were enrolled in the Bay Area States. The results of the August 1988 signup will be available later in the year.

Forestry Incentives Program (FIP)

The FIP is a program that provides cost-share incentives to landowners and operators for tree plantings and tree stand improvements for commercial timber production, however, it invariably protects water quality. The FIP is administered in 47 States throughout the nation. The annual appropriation for the last 3 years has been \$11,891,000. Approximately 230,000 acres were in this program in FY 1986.

Emergency Conservation Program (ECP)

The objective of the ECP is to cost-share with eligible persons to rehabilitate farmlands damaged by wind and water erosion, floods, hurricanes, or other natural disasters and for the development of water enhancement measures during periods of severe drought. The ECP provides water quality enhancement or protects water quality by restoring farmland and conservation measures to predisaster condition.

Comments

Question: The Subcommittees indicated an interest in whether changes or improvements are needed in the Food Security Act of 1985 (the Act) to enable accomplishment of the Chesapeake Bay program and the 1987 Bay Agreement?

Answer: At this time, we know of no reason to amend the Food Security Act of 1985. However, we have a task force within the Department examining all of the conservation programs in preparation for the 1990 Farm Bill.

Question: There was an expressed interest in whether additional legislation, Federal funding or program resources are needed to assure effective implementation of the commitments made in the Bay Agreements?

Answer: Much can be done under current conservation cost-sharing programs and the CRP to achieve the objectives of the Chesapeake Bay Program and the 1987 Chesapeake Bay Agreement, however, these programs have some limitation, statutory or under regulations, that prevents maximum utilization of the programs to reach the desired objectives of the Bay agreement. The ACP has a maximum cost-share payment limitation of \$3500 per person for annual agreement and \$35,000 for long term agreements. The CRP has a \$50,000 annual rental payment limitation that must be considered where owners or operators have large land holdings or where it is expensive to retire such land from agricultural production. If the 45 million acre CRP were to solve water quality and other environmental problems throughout the Nation, it would greatly dilute current efforts to meet its primary erosion control objective.

Question: What improvements could be made in interagency cooperation and coordination?

Answer: Subsequent to the signing of the 1987 Chesapeake Bay Agreement, ASCS have entered in a MOU with EPA concerning the agreement. Under this memorandum, ASCS is committed to closer cooperation with EPA in achieving the Bay agreement with respect to the Federal programs administered by ASCS in the area.

Agencies of the Department of Agriculture, including ASCS, are coordinated through the Office of the Secretary. None of the standing committees coordinates National Resources and Environment activities. This past year, the Secretary had a special task force on agriculture chemicals in the environment. A coordinated water quality initiative is under consideration.

Question: How can the Federal government coordinate environmental response to deal with coastal degradation problems in a more comprehensive fashion?

Answer: We believe that the MOU's such as those being entered into between USDA agencies and the EPA serve as a coordinating mechanism to address in a comprehensive fashion an environmental response to coastal degradation and other problem areas in the Chesapeake Bay. The implementation of Section 319 of the Clean Water Act in the

States Nonpoint Source Management Programs addressing Federal program consistency with State water quality programs should be very instrumental in providing a more comprehensive response by the Federal government to any State's water quality problems.

Question: What new initiatives should be undertaken to supplement those outlined in the Bay Agreement?

Answer: The initiatives outlined in Bay Agreement appear quite comprehensive and if acted upon by all parties should address greatly the Bay problems.

ASCS has funded special water quality projects on numerous occasions in the past under the ACP such as allocating \$8,000,000 in FY 1988 and this allocation is expected to continue from the FY 89 appropriations. The States in the Chesapeake Bay will have an opportunity to submit special water quality project applications as they have in the past.

Annually, ASCS conducts Conservation Review Group Meetings to consider recommendations for improvements or needed changes in the various conservation programs to meet conservation and water quality needs for those areas where the programs are applicable. This review process is under way in all States and counties. Upon completion of the State and county reviews, a National Conservation

Review Group Meeting will be held to consider recommendations submitted by the State and County Conservation Review Groups. This will include recommendation submitted by the Bay States pertinent to the Chesapeake Bay.

Question: Based on your experience with the protection of the Chesapeake Bay, do you have comments or suggestions for the design of programs to protect other estuaries or coastal areas around the country?

Answer: As indicated, we do have experience in administering the RCWP projects in the Bay States, the ACP special water quality projects, the CRP, and the other conservation and water quality programs. If it is decided that similar programs and projects efforts would substantially protect estuaries or coastal areas throughout the country, then we could prepare specific information on how best to meet the objectives.

Thank you, Mr. Chairman, for allowing us to comment on the protection of the Chesapeake Bay.



United States
Department of
Agriculture

Extension
Service

Office of the
Administrator

Washington, DC
20250-0900

October 4, 1988

Honorable George J. Mitchell
Chairman, Subcommittee on Environment Protection
Committee on Environment and Public Works
United States Senate
Washington, DC 20510-6175

Dear Senator Mitchell:

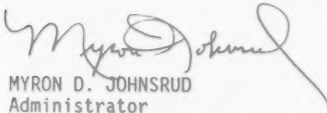
This is in response to your September 14, 1988, letter requesting written testimonies in support of oversight hearings to review the progress of Federal and State programs to clean up and restore the Chesapeake Bay.

We are pleased to report that the Extension Service-USDA, and the Cooperative Extension Services in each State have been involved in various ongoing Federal and State programs for the benefit of the Chesapeake Bay. Our current efforts include both public education programs as well as specific information on the use and management of pesticides and fertilizer nutrients which are potentially detrimental to the Bay. The following are a few examples of specific activities we undertake within the region to restore and upgrade the Chesapeake Bay:

- In Pennsylvania, Cooperative Extension conducts general education programs on water quality in Southeastern Pennsylvania--the area closest to the Bay; and works directly with farmers in this region to reduce their use of nitrogen fertilizers. Such reductions will improve or maintain the quality of their own drinking water and will reduce inputs to the Bay.
- Maryland Cooperative Extension has also instituted an educational program, including free analysis of manure samples, to assist farmers in balancing their soil fertility programs and to reduce nutrient inputs to the Bay.
- The Virginia Cooperative Extension has focused its efforts on the management of animal manure and farm fertilizer inputs to the Rappahannock River, a major agricultural area tributary to the Bay. This program is designed to reduce the movement of such materials to the Bay and to its associated wetlands, to reduce algal growth, and to provide conditions conducive for the reestablishment of submerged aquatic vegetation.

We appreciate the opportunity to provide written testimony to the Subcommittee.

Sincerely,


MYRON D. JOHNSRUD
Administrator

Enclosure



The Extension Service is an agency of the
United States Department of Agriculture and
the Federal Partner in the Cooperative Extension System.

CHESAPEAKE BAY WRITTEN TESTIMONIES

- Q1: The Chesapeake Bay Program was authorized in the Clean Water Act Amendments of 1987. Are changes or improvements to this Act or other environmental laws (e.g., Coastal Zone Management Act, Food Security Act of 1985, Emergency Striped Bass Act, Federal agencies' authorizing legislation) needed to enable you to accomplish the objectives of the Chesapeake Bay program and the 1987 Bay Agreement?
- A: We see no particular need for changes to the related environmental laws specified. The Extension Service now carries out limited efforts on the Chesapeake Bay under the Smith-Lever Extension legislation. However, that legislation does not contain any specific authorization for Extension to carry out such programs. The provision of specific authorization for the Chesapeake Bay and similar programs would be most helpful, particularly if such authorization were to be provided within the context of the Clean Water Act; and especially if it were to be accompanied by the authorization of attendant appropriations.
- Q2: What additional legislation, Federal funding or program resources are needed to assure effective implementation of the commitments made in the Bay Agreement?
- A: Given the specific authorization mentioned in response to the previous question, we see no need for further legislation. At the same time, we must point out that the resources available to the Cooperative Extension System for this program have been quite limited, especially considering the scope of the Chesapeake Watershed (4 states) and the critical state of the Bay. We estimate that additional resources of around \$2 million per year, to be used in Virginia, Maryland, Pennsylvania and New York, would be required for education type programs.
- Q3: What improvements could be made in interagency cooperation and coordination?
- A: The Extension Service has developed a specific Memorandum of Understanding with the Soil Conservation Service to increase the levels of cooperation, coordination and joint programming on water quality. The Extension Service is also developing a Memorandum of Understanding with EPA's Chesapeake Bay Program Office, relative to Cooperative Extension programs in the Watersheds of the Bay. At present, we are not aware of any barriers to interagency cooperation and coordination, except those posed by the current levels of available resources for programming.
- Q4: How can the Federal Government coordinate environmental response to deal with coastal degradation problems in a more comprehensive fashion?
- A: We suggest that the Federal Government can best coordinate such responses by identifying the agencies which should be involved in such efforts and by assuring both enabling legislation and Congressional direction to pursue such activities.

Q5: What new initiatives should be undertaken to supplement those outlined in the Bay Agreement?

A: Given the broad and comprehensive nature of the existing initiatives, we see no need for new initiatives. The current initiatives should be strengthened, however, especially the initiative on Public Information, Education and Participation.

Q6: Based on your experience with the protection of the Chesapeake Bay, do you have comments or suggestions for the design of programs to protect other estuaries or coastal areas around the country?

A: Since the Chesapeake Bay mirrors conditions in many of the Nation's estuaries, and is a presage for many others, we suggest that comprehensive programs--sometimes correctional, as on the Chesapeake Bay, and sometimes preventive--should be quickly instituted. The Cooperative Extension System, in cooperation with state governments, is attempting to address the relevant issues. The transfer of information, education, technologies and methodologies is largely governed by the resources available for such programs.



United States
Department of
Agriculture

Forest
Service

Washington
Office

12th & Independence SW
P.O. Box 96090
Washington, DC 20090-6090

Reply to: 1510

Date: OCT 14 1988

Honorable George J. Mitchell
Chairman, Subcommittee on Environmental Protection
Committee on Environment and Public Works
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

Enclosed is our statement for the record on the Chesapeake Bay program as requested in your letter of September 14, 1988.

Please let us know if we may be further assistance.

Sincerely,


DALE ROBERTSON
Chief

Enclosure



Caring for the Land and Serving People

FS-6200-28(4/88)

STATEMENT OF
UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Before the
Subcommittee on Environmental Protection
Committee on Environment and Public Works
United States Senate

Concerning the clean up and restoration of the Chesapeake Bay

September 30, 1988

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

Thank you for this opportunity for the Department of Agriculture to provide a statement regarding forestry progress and needs to restore the Chesapeake Bay.

Forestry practices are effective, but presently under-utilized, tools for restoring the Chesapeake Bay. The USDA-Forest Service is committed to supporting the Chesapeake Bay Program and the 1987 Chesapeake Bay Agreement. Our responses to your questions are as follows:

1. The Chesapeake Bay Program was authorized in the Clean Water Act Amendments of 1987. Are changes or improvements to this Act or other environmental laws (e.g., Coastal Zone Management Act, Food Security Act of 1985, Emergency Striped Bass Act, Federal agencies' authorizing legislation) needed to enable you to accomplish the objectives of the Chesapeake Bay program and the 1987 Bay Agreement?

In our opinion, no changes to the Clean Water Act Amendments of 1987 are needed at this time to enable us to support the forestry efforts in the Bay region. The Food Security Act of 1985, the Cooperative Forestry Assistance Act of 1978, and other Forest Service enabling legislation are adequate to address the forestry needs of the Chesapeake Bay Region.

2. What additional legislation, Federal funding or program resources are needed to assure effective implementation of the commitments made in the Bay Agreements?

The Forest Service is actively supporting the 1987 Bay agreement in cooperation with the Environmental Protection Agency and the State Foresters in the Bay Region. Additional legislation and funding are not needed at this time. Current program funding is being utilized to coordinate forestry contributions to the Bay Clean up. Under the Conservation Reserve Program we are cost sharing in the planting of trees along the tributaries and shoreline areas of the bay region. Two examples of state cooperative programs are Maryland's Green Shores tree planting program and Pennsylvania's buffer strip tree planting program to mitigate pollution from animal wastes. We are planning ways to capitalize on these pilot projects and to expand forestry's contributions to other States contributing to the clean up. We are working with the Agricultural Stabilization and Conservation Service, to determine whether more conservation program resources could be targeted to the Bay Region to address Bay pollution problems.

3. What improvements could be made in interagency cooperation and coordination?

Interagency and public-private cooperation is progressing well, and we do not have any recommendations for improvement at this time. The Forest Service, Northeastern Area, State and Private Forestry has an Interagency Agreement with the Environmental Protection Agency in support of the Chesapeake Bay efforts. A copy of this agreement is attached as Supplement No. 1.

Our Northeastern Area has also organized the Chesapeake Bay Forestry Coordinating Committee (Supplement No. 2). This newly formed committee is made

up of representatives from the Forest Service, State forestry agencies (Maryland, Pennsylvania, Delaware, New York, West Virginia, Virginia), the Soil Conservation Service, and the Chesapeake Bay Foundation. We believe the goals and objectives of the committee will greatly enhance coordination.

4. How can the Federal government coordinate environmental response to deal with coastal degradation problems in a more comprehensive fashion?

Current emphasis of the forestry community has focused on forest buffer strips along the Bay and tributary streams. The Conservation Reserve Program, authorized by the Food Security Act of 1985, provides for the establishment of filter strips along streams, rivers, and other bodies of water. Maryland has established a Green Shores tree planting program with similar emphasis. Intensified promotional and educational efforts could increase the amount of tree planting conducted with these programs. Such coordinated Federal and State partnership efforts are beginning to make a difference. The Federal government should continue to emphasize partnership approaches with State and local governments.

5. What new initiatives should be undertaken to supplement those outlined in the Bay Agreement?

Current initiatives are addressing the identified problems in the Bay Region. Interagency cooperation is greatly improved and accomplishments are being made. The Bay situation is slowly improving. When more trees are planted along the shores, agricultural nutrient and pesticide runoff will be reduced. As more municipalities and farms adopt forest land spray irrigation systems for organic waste disposal, nutrient loading will be reduced from point sources of pollution. Forestry offers an opportunity to correct the Bay's pollution problems and provide additional benefits in the form of aesthetics, recreation,

wildlife and fish habitat, and an improved quality of life. Certain forestry practices to control or mitigate nonpoint pollution can be more cost effective than structural, engineered, alternatives.

6. Based on your experience with the protection of the Chesapeake Bay, do you have comments or suggestions for the design of programs to protect other estuaries or coastal areas around the country?

The Chesapeake Bay Program can serve as a model for other parts of the country. We have learned that the most effective method for dealing with this situation is through total cooperation, coordination, and appropriate contributions. If successful clean up is going to be achieved whole-basin strategies from headwaters to the estuaries will be needed. All participants, Federal, State, local, and private, must recognize that a long term commitment is required to restore the forested watersheds and waterways that are so vital in protecting our bays and estuaries.

This concludes the Department's statement. We would be happy to provide any additional information you may desire.

USDA Supplemental Statement No. 1

INTERAGENCY AGREEMENT

BETWEEN

USDA-FOREST SERVICE

AND

ENVIRONMENTAL PROTECTION AGENCY

I. Purpose

The purpose of this agreement is to amplify the January 1988 Memorandum of Understanding between the USDA-Forest Service and the Environmental Protection Agency, as it pertains to providing technical services to State Foresters and other cooperators for the purpose of reducing nonpoint source pollution addressed in the 1987 CHESAPEAKE BAY AGREEMENT.

II. Authorities

The Forest Service is responsible for providing leadership in forest and range management, and ensuring a continuing flow of natural resource goods and services, including quality water, to help meet the needs of the Nation. This mission is accomplished through management of the National Forest System, cooperation with State and private landowners, and forest and range research.

The Environmental Protection Agency has regulatory responsibility for the control and abatement of pollution in areas of air, water, solid waste, pesticides, noise, and radiation. This includes setting and enforcing environmental problems; and assisting State and local cooperators.

The agencies share a mutual interest in encouraging responsible and efficient management of the Nation's forest and range resources in an environmentally sound manner. The actions carried out under this agreement will strengthen coordination, increase understanding and action on key environmental issues, and reduce duplication of resources and expertise.

III. Provisions

The Forest Service agrees:

- to designate or identify a liaison person, in the Northeastern Area, State and Private Forestry, for the Chesapeake Bay Program.
- to encourage, guide, and coordinate the Forest Service working arrangements with the Environmental Protection Agency, Chesapeake Bay Liaison Office.
- to provide for the transfer of biological, physical, and economic research technology relating to forestry and harvesting practices and the effects of these practices on water quality, soil erosion, and sedimentation in the Bay area.
- to provide the Environmental Protection Agency with forestry expertise through technical reviews, advice, consultation in plan reviews and development of Chesapeake Bay Program training, research, and demonstrations.
- to encourage and direct, as feasible, programs and activities conducted or supported by the Forest Service and its cooperators toward balanced improvement and maintenance of the quality of the Chesapeake Bay's forest resources and its environment while maintaining the capability for sufficient and efficient production.
- to integrate Chesapeake Bay program goals and concerns, to include forestry best management practices for nonpoint pollution control, into Forest Plan implementation for National Forest System lands within the Bay's watershed.
- to evaluate, in conjunction with States with lands in the Chesapeake Bay watershed, the impacts of forestry best management practices for nonpoint pollution.
- in cooperation with States with watersheds in the Bay region, to develop or promote the installation of forest practices, including wooded filter strips, which will improve water quality while also enhancing wildlife habitat.
- to cooperate with the states to develop urban forestry plans and implement them to reduce soil erosion and nitrogen loading in the bay.
- to train Youth Conservation Corps enrollees in urban forestry skills such as tree planting, fertilization, and maintenance.

The Environmental Protection Agency agrees:

- to support Forest Service membership on the Federal Agencies Coordination Committee, Implementation Committee, Non-Point Source Subcommittee and other Agreement entities as appropriate.
- to utilize Forest Service technical reviews, advice, consultation, and technical assistance in decisions regarding development of programs, technical policies, regulations, guidelines, training, research, and demonstrations relative to the Chesapeake Bay Program.
- to establish processes which encourage, guide, and coordinate entities of the Environmental Protection Agency and its cooperators to develop working arrangements with the Forest Service, State Foresters, and other cooperators for utilizing various resources, facilities, and personnel.
- to encourage and direct, as feasible, programs and activities conducted or support by the Environmental Protection Agency and its cooperators toward balanced improvement and maintenance of the quality environment while maintaining the capability for sufficient and efficient production.
- to provide office space as needed.

It is mutually agreed:

- to exchange, on a temporary detail basis, and within personnel and funding capabilities, personnel so that each agency may better learn the public policies of the other and so that each can efficiently utilize mechanisms and expertise of the other agency.
- to the extent possible, support each other to implement water quality programs on forested lands.

IV. Duration of the Agreement

This agreement becomes effective on the date of signature by both parties and continues for five (5) years or until modified by mutual consent or terminated by either party.

/s/ Alvin R. Morris
ENVIRONMENTAL PROTECTION AGENCY

March 23, 1988
DATE

/s/ Duane L. Green
(for) NORTHEASTERN AREA
STATE & PRIVATE FORESTRY

March 14, 1988
DATE

USDA Supplemental Statement No. 2

CHESAPEAKE BAY FORESTRY COORDINATING COMMITTEE

PREMISE

Sixty to sixty-five percent of the Chesapeake Bay Region is forested.

Trees and forestry provide effective natural solutions to point and non-point pollution reduction and treatment.

Trees and forest communities are vital resources to protect and enhance the quality of the Chesapeake Bay.

GOAL STATEMENT

The Chesapeake Bay Forestry Coordinating Committee goal is to coordinate and accelerate forestry activities to restore the Bay.

ROLES

The Chesapeake Bay Forestry Coordinating Committee will:

1. Provide a contact point between the forestry community and Federal, State and local governments and the Bay Program standing committees.
2. Collect and evaluate information that relates forest establishment and maintenance to improving both aquatic and terrestrial environments of the Bay Region.
3. Ensure that information is available in useful form to various segments of the public and responsible authorities.
4. Promote appropriate forestry solutions in the Bay Region.
5. Promote multiple use management of forest lands in the Bay Region.



United States
Department of
Agriculture

Soil
Conservation
Service

P.O. Box 2890
Washington, D.C.
20013

OCT 4 1988

Honorable George J. Mitchell
Chairman, Subcommittee on
Environment Protection
United States Senate
Washington, D.C. 20510-6175

Dear Mr. Chairman:

This is in response to your request for written comments on the following issues related to the protection of the Chesapeake Bay:

Question No. 1: The Chesapeake Bay Program was authorized in the Clean Water Act Amendments of 1987. Are changes or improvements to this Act or other environmental laws (e.g., Coastal Zone Management Act, Food Security Act of 1985, Emergency Striped Bass Act, Federal agencies' authorizing legislation) needed to enable you to accomplish the objectives of the Chesapeake Bay program and the 1987 Bay Agreement?

Answer: The Soil Conservation Service has the legislative authority necessary for being an active partner with the other Federal and state agencies, environmental organizations, and citizen groups participating in the Chesapeake Bay program. The implementation of the Food Security Act of 1985 complements programs being developed by the states in the Chesapeake Bay drainage area. Specifically, the Conservation Compliance provision of the Act requires landusers to properly manage cropland having highly erodible soils if they wish to receive benefits from USDA programs. In addition, the Conservation Reserve Program provides the opportunity to place the cropland with highly erodible soils or cropland adjacent to streams and water bodies into grass or trees and receive income during a ten-year period while adjusting farming operations. The Wetland provisions complement the Bay Agreement in protecting and retaining wetlands.

Question No. 2: What additional legislation, Federal funding or program resources are needed to assure effective implementation of the commitments made in the Bay Agreement?

Answer: The Soil Conservation Service (SCS) accelerated activities in the Chesapeake Bay program in fiscal year 1985 when Congress provided an increase of 10 positions. From FY-1986 through FY-1988, a total of 31 positions were provided annually and for FY-89, Congress provided 41 positions and corresponding resources. With the recent submission of our FY-1990 budget for water quality programs activities to the Office of Management and Budget, and approval by Congress, sufficient resources will be available to assure effective implementation of the SCS commitments in the Bay Program.



The Soil Conservation Service
is an agency of the
Department of Agriculture

Honorable George J. Mitchell

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Question No. 3: What improvements could be made in interagency cooperation and coordination?

Answer: The Soil Conservation Service (SCS) recently entered into a memorandum of understanding with the Extension Service to improve program delivery concerning water quality issues. In addition, we are actively working with 12 other USDA agencies to implement Department policies concerning surface and ground water issues. These program initiatives will complement the cleanup efforts in the Chesapeake Bay. Through the cooperation of the Cooperative Extension System, universities, and research agencies, the SCS Field Office Technical Guide will be jointly developed and used in the conservation planning process concerning water quality issues. These guides are tailored to meet local conditions and economic concerns. Most USDA agencies and local conservation districts use the SCS Field Office Technical Guide. SCS is encouraging the Environmental Protection Agency and state water quality agencies to utilize the SCS Field Office Technical Guide in administration of Section 319 of the Clean Water Act. Such use would provide continuity in resource planning and avoid duplication of resources.

Question No. 4: How can the Federal government coordinate environmental response to deal with coastal degradation problems in a more comprehensive fashion?

Answer: The Clean Water Act provides for the Environmental Protection Agency to be the lead Federal agency in the Chesapeake Bay cleanup efforts. With the inclusion of the other Federal agencies, the Bay program is demonstrating that Federal agencies can coordinate environmental response needed for cooperation with state agencies, environmental organizations, and citizen groups. In response to local, state, and regional initiatives to restore and protect estuaries and coastal resources, a Federal Agency Committee involving top agency management administrators should be established for each of the priority estuaries to provide for Federal government coordination.

Question No. 5: What new initiatives should be undertaken to supplement those outlined in the Bay Agreement?

Answer: The Bay Agreement is very comprehensive and all inclusive. However, the projected population growth throughout the basin requires that a comprehensive management plan be developed which will balance the needs for growth and proper protection of the natural resources. In developing such a plan, specific attention should be given to establishment and administration of sediment and erosion control and stormwater management in areas of new construction and the retrofitting of established urban areas to include stormwater management. In addition, with the increased recreational use of the Chesapeake Bay, pleasure boat owners and users need to have provisions and/or incentives to properly dispose of waste.

Honorable George J. Mitchell

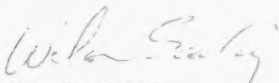
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Question No. 6: Based on your experience with the protection of the Chesapeake Bay, do you have comments or suggestions for the design of programs to protect other estuaries or coastal areas around the country?

Answer: The Soil Conservation Service (SCS) has a long history of cooperatively working with state soil conservation agencies and local conservation districts in advancing the science and art of good land use. Through this cooperative arrangement and the experience of the Chesapeake Bay program, the Great Lakes program, and the experimental Rural Clean Water Program, to name a few, we are incorporating both surface and ground water concerns into all SCS programs. Staffing and program administration will be directed to protect other estuaries or coastal areas around the country. This working relationship could be strengthened with a memorandum of understanding between the SCS and the Environmental Protection Agency to establish coordination of technical assistance and use of the SCS Field Office Technical Guide needed in implementation of Section 319 of the Clean Water Act.

I appreciate your interest in the Chesapeake Bay program and look forward to a fruitful partnership with the citizens of the Chesapeake Bay area as we continue to address this important environmental issue in the years to come.

Sincerely,



WILSON SCALING
Chief



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Washington, D.C. 20230

Office of Legislative Affairs

October 5, 1988

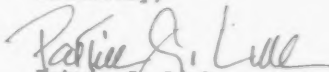
Honorable George J. Mitchell
Chairman, Subcommittee on
Environmental Protection
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510-6175

Dear Mr. Chairman:

We are pleased to forward NOAA's Statement for the Record regarding the September 20 hearing on Progress of Programs to clean up the Chesapeake Bay.

If you, or your staff, require additional information, please let me know.

Sincerely,


Patric G. Link
Acting Director

Enclosure



STATEMENT SUBMITTED FOR THE RECORD BY
 WILLIAM E. EVANS
 UNDER SECRETARY FOR OCEANS AND ATMOSPHERE
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 U.S. DEPARTMENT OF COMMERCE
 FOR THE HEARING ON
 PROGRESS OF PROGRAMS TO CLEAN UP THE CHESAPEAKE BAY
 BEFORE THE
 SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION
 COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
 U. S. SENATE

SEPTEMBER 20, 1988
 WASHINGTON, DC

Mr. Chairman and Members of the Subcommittee: My name is William E. Evans, and I am the Under Secretary for Oceans and Atmosphere of the U.S. Department of Commerce, in charge of the National Oceanic and Atmospheric Administration (NOAA). I appreciate the opportunity to report on NOAA's involvement in the clean up of the Chesapeake Bay and to respond to the Subcommittee's questions regarding needed improvements in the clean-up effort.

Our Nation's estuaries and their associated coastal waters are vital, productive natural systems. They also support a great number of commercial, recreational, residential, and industrial activities. Demographic trends indicate that by 1990 approximately 75 percent of the U.S. population will live in the coastal States. Accompanying this population growth will be increasing pressures on and competing uses of the coastal and

estuarine environment and its resources. There is a need for science and management to support a balanced approach to the development of our estuarine areas such as the Chesapeake Bay. NOAA's programs addressing this need include: resource conservation, coastal system dynamics, weather tracking and forecasting, environmental monitoring, biological process research, and coastal ecosystem management. NOAA is addressing these issues in the Chesapeake Bay region with a solid interdisciplinary approach, described below.

PROGRESS IN NOAA'S EFFORTS TO RESTORE AND PROTECT CHESAPEAKE BAY RESOURCES

NOAA involvement in Chesapeake Bay presently includes a range of research, assessment, and management programs. The Administration proposes to terminate or reduce these programs because they have met their original goals or are of lower priority. The principal programs include 1) the Chesapeake Bay Study, 2) cooperative research and advisory programs in Maryland and Virginia, 3) coastal zone management and estuarine reserve research programs in both States, 4) environmental assessment programs, and 5) fisheries research and management programs.

Chesapeake Bay Study

NOAA conducts specific Chesapeake Bay studies directed to the improvement of fisheries statistics, fisheries stock assessment,

oxygen depletion research, and data management. The NOAA Estuarine Programs Office (EPO) coordinates these efforts.

NOAA has focused its efforts on fisheries research and stock assessment studies, and on the improvement of fisheries statistics. The Chesapeake Bay Stock Assessment Committee (CBSAC), a Federal/State organization, was established in 1985 by NOAA to develop cooperative agreements with the four Bay jurisdictions (Maryland, Virginia, District of Columbia, and Pennsylvania) for improving fisheries statistics and developing a Bay-wide stock assessment plan. CBSAC completed the stock assessment plan in July 1988, pursuant to the 1987 Chesapeake Bay Agreement. The plan calls for new efforts to collect consistent, Bay-wide, short and long-term data that are essential for stock assessment and monitoring.

NOAA has worked with Maryland and Virginia research institutions to conduct cooperative research efforts related to the problem of oxygen depletion in Chesapeake Bay. A report entitled, Dissolved Oxygen: Processes and Effects, was released last year, including summaries of research findings. The Chesapeake Bay Environmental Effects Committee was established in 1988 to identify new research priorities and to ensure that the NOAA research supports the goals and objectives of the 1987 Chesapeake Bay Agreement. This Committee includes scientific representatives from all the jurisdictions in the Chesapeake Bay Program.

Projects related to Chesapeake Bay data management, remote sensing, and modeling have also been conducted by NOAA's National Environmental, Satellite, Data, and Information Service (NESDIS). The report, Chesapeake Bay Environmental Data Directory, published last December, was produced in cooperation with Sea Grant and contains descriptions of environmental data collected throughout the Chesapeake Bay. Three other NESDIS projects in the last year include 1) the development of a microcomputer-based coastal information system for displaying and analyzing environmental data, 2) the use of a numerical circulation model of the Bay to trace the drift of larval blue crabs at the Bay mouth, and 3) the application of satellite data and low-altitude aircraft imagery to estimate suspended sediment and chlorophyll data in surface waters of the Bay.

Cooperative Research and Advisory Programs

NOAA has supported environmental research, seafood technology development, marine advisory services, and educational activities of various universities throughout the Chesapeake Bay area as part of a cooperative program. This program supports scientific and technical projects that are of national and regional importance. In fact, many of the advisory services, publications, and outreach activities developed for the Bay region have been models for other regions. These efforts are described in the Bay-wide Communications Plan, adopted in May 1988, pursuant to the Chesapeake Bay Agreement.

Coastal Resource Management Programs

NOAA provides grants to the coastal zone management programs in both Maryland and Virginia pursuant to Section 306 of the Coastal Zone Management Act (CZMA). In addition, under Section 309 of the CZMA, Maryland, Virginia, and Pennsylvania use Federal funds to support citizens' monitoring programs in the Bay area. This cooperation allows the States and local governments to protect estuarine resources in the face of population growth and development pressures, especially with respect to public access to the Bay, protection of wetlands and bay grasses, and planning in critical areas.

Under Section 315 of the CZMA, NOAA has been coordinating with the two States to acquire, develop, and operate estuarine research reserves. Maryland has established a site at Monie Bay, on the Eastern Shore, encompassing 3,348 acres of tidal creeks, salt marshes, submerged aquatic vegetation beds, upland and near-shore forests, and a great blue heron rookery. NOAA is evaluating three additional sites in Maryland for reserve designation (Jug Bay on the Patuxent River, Adkins Marsh on the Choptank River, and Otter Point Creek in Harford County). In Virginia, four sites located in Mobjack Bay and along the York River are being considered for inclusion in the program. Over the long term, this program should enable the States to acquire key wetland areas for use in Bay-wide education and research.

Environmental Assessment

The National Status and Trends (NS&T) Program was initiated in 1984 to describe the current status and future trends of selected contaminants in sediments, fish, and shellfish at sites around the country. A major product of the NS&T Program will be a national data base to aid in assessing trends of pollutant levels and their effects on living resources. The Program has two major components: the Benthic Surveillance and Mussel Watch Projects. Sediments and demersal finfish are sampled annually at up to five sites in the Chesapeake Bay as part of the Benthic Surveillance Project. Fish are examined for external abnormalities, and selected tissues are examined for evidence of lesions or other disorders. Livers and bile are analyzed for toxic contamination. At the six Mussel Watch sites in the Chesapeake Bay, oysters and sediments are also analyzed once per year for toxicants. Preliminary findings place portions of Chesapeake Bay near the top of the list of contaminated estuaries. NOAA is presently working with the Chesapeake Bay Program (CBP) to choose the best locations for Mussel Watch stations in Bay tributaries.

Fisheries Research and Management

NOAA's fishery organization, National Marine Fisheries Service (NMFS), has scientific and management responsibilities over the Nation's commercial and recreational fisheries.

Three areas which have the most relevance to Chesapeake Bay are described below, although there are many other NMFS programs.

Fisheries Statistics: NOAA supports Maryland and Virginia efforts to conduct fisheries research and to collect fisheries statistics. Commercial catch and effort data are collected by the States to estimate total landings, assess trends, and develop fisheries management measures. NOAA conducts the National Marine Recreational Fisheries Survey, used to estimate recreational fish catch and effort data, in the Bay region. The States often supplement this survey to improve regional estimates. NOAA also supports research on the effects of recreational fishing on annual fishing patterns and on socioeconomic effects of sportfishing in the Chesapeake Bay.

Protected Species and Habitat Conservation: NOAA cooperates with other Federal and State agencies involved in water resource planning and development around the Chesapeake Bay. To prevent or reduce damage to fishery resources and their habitats, NOAA reviews wetlands dredge-and-fill proposals, and permits for waste discharge to and withdrawal from navigable waters. From January 1981 to December 1985, NOAA reviewed approximately 3,000 applications for construction permits and hydroelectric licensing associated with proposals in the Chesapeake Bay and its tributaries.

Interjurisdictional Fisheries Management: NOAA assists the States in the Bay region to address declines of the striped bass, shad, and river herring. With this support, Maryland is characterizing the sex, age, size, and composition of striped bass to determine indices of relative abundance. Virginia is also examining the stock composition and year class for striped bass, shad, and river herring stocks as well as comparing the current status of shad stocks to previous years in the James, York, and Rappahannock Rivers.

NOAA is involved in three levels of fisheries management planning, at the coast-wide, regional, and Bay-wide levels. The Atlantic States Marine Fisheries Commission, a coast-wide organization designed to coordinate the management of coastal fisheries stocks, develops plans for migratory coastal fish. The Mid-Atlantic Fishery Management Council approves Federal fishery management plans for offshore fisheries which often include species that are periodic residents of Chesapeake Bay. The Chesapeake Bay Stock Assessment Committee is coordinating with State fisheries managers to develop Bay-wide fisheries management plans, called for under the Chesapeake Bay Agreement.

NOAA Response to the Chesapeake Bay Agreement of 1987

The CBP Federal Workplan, adopted in July of this year as part of the Chesapeake Bay Agreement, summarizes how NOAA will work to meet the Agreement's goals and objectives and how it will

coordinate with other Federal agencies. NOAA plans to be responsive to the Agreement in several specific ways: environmental effects research, fisheries statistics and stock assessment, and remote sensing.

The Chesapeake Bay Environmental Effects Committee plans to continue coordinating research studies on low dissolved oxygen with a gradual shift in emphasis to toxics research. The Committee plans to use the Chesapeake Bay Comprehensive Research Plan, adopted in July pursuant to the Bay Agreement, and the Draft Toxics Control Strategy (due by December 1988) for guidance on 1989 research priorities. The Chesapeake Bay Stock Assessment Committee plans to follow through on its recommendations for long-term Bay-wide data collection programs for stock assessment and fisheries monitoring and short-term studies on fishery recruitment processes and biological effects. In cooperation with the Remote Sensing Working Group of the CBP Scientific and Technical Advisory Committee, NOAA will continue to develop remote methodologies which would improve the detection of algae blooms responsible for the low levels of dissolved oxygen in Chesapeake Bay.

RESPONSES TO SUBCOMMITTEE QUESTIONS

QUESTION 1. The Subcommittee questioned the need for improvements to the Clean Water Act or other environmental laws. Time has not

permitted review and coordination with other concerned agencies, and the following represents only the views of the Department of Commerce. First, the Water Quality Act of 1987 needs to be broadened and strengthened to ensure that the wetlands protection functions Congress envisioned are, in fact, provided. Specifically, the Act should include the following:

1) A clause setting a goal of "no net loss" for wetlands supporting living marine resources to match the approach being proposed in the Draft Bay-wide Wetlands Protection Policy, due for adoption in December 1988, under the Chesapeake Bay Agreement. Nationally, we have lost over 50 percent of our valuable wetlands. If we are to maintain biological productivity in our estuaries, coastal waters and the Exclusive Economic Zone (EEZ), we must not only stabilize but reverse this downward trend.

2) Language expressly recognizing the other valuable functions that wetlands provide, in addition to their water quality benefits. Wetlands serve as important spawning and nursery zones for numerous species of fish which are major components of both the commercial and recreational fisheries. They are also important wildlife habitats, and they provide nutrients (detritus) which help fuel the estuarine food chain. The value of estuarine-dependent fisheries to the nation in 1986 was \$13,000,000,000.

3) Coverage for all forms of wetlands destruction, including secondary impacts. Presently the Act only covers the filling of wetlands under Section 404. Unfortunately, we continue to lose wetlands to dredging, to the construction of pile-supported structures, and from secondary impacts such as the diversion of freshwater flow.

4) Modifications to restrict the use of general, nation-wide, and regional permits, as necessary, to ensure that the basic thrust of the Act is accomplished. The Act makes provisions for the issuance of "general nationwide permits" that meet certain criteria. Projects which qualify must be similar in nature and have no significant impacts either singularly or cumulatively. NOAA supports this process and has worked with the Corps of Engineers, at all levels, to develop this aspect of the Act. There is a need, however, to insure that this new system prevents significant impacts from occurring from the cumulative loss of small areas of wetlands. Improved permit tracking could help alleviate this concern.

5) Establishment of a uniform wetlands definition to guide the regulatory program. Presently, there is considerable confusion over the exact wetland boundary due to various definitions applied by the regulatory and advisory agencies. This inconsistency is both burdensome and confusing for the applicant and results in a substantial expenditure of staff and funds.

The National Wetlands Policy Forum, a multidisciplinary group of State, Federal, private, and non-governmental organization representatives, has recently issued a draft set of recommendations very similar to those outlined above. Congressional action on these recommendations will result in improved efficiency in the regulatory process to protect wetlands, better research for wetlands, and increased public education on the value of these living resources.

There are several nonpoint source pollution programs that could be strengthened which would be particularly important in Chesapeake Bay. Agricultural, urban, and forestry Best Management Practices (BMP's) are being counted on to provide a substantial amount of the required 40 percent nutrient reduction goal. We must make effective and efficient use of several programs if we are to achieve the goal of restoration of living resources. Specifically, the Conservation Reserve Program could be expanded and modified by increasing the cap on enrollment from 45 million acres to 60 million acres and by allowing the planting of trees along natural water courses as a BMP in addition to, or as a substitute for, vegetative filter strips. Also, Section 319 of the Water Quality Act of 1987 could be fully utilized to help in meeting the Bay Agreement's 40 percent nutrient reduction goal.

QUESTION 2. In response to the Subcommittee's second question regarding the need for additional legislation or resources, the most immediate need deals with obtaining long-term support for the Bay-wide Living Resources Monitoring Plan, adopted in July of this year, pursuant to the Agreement. The overall goal of the Bay Agreement is the restoration and protection of living resources, so it is essential to document the present status and past trends and to monitor their status in the future. Only by doing so will we have the yardstick for evaluating whether the billions of dollars worth of pollution control, habitat management, and fisheries management programs are effective.

QUESTIONS 3 AND 4. With respect to the Subcommittee's interest in ways to improve interagency coordination, NOAA has mounted an effort to work more closely with EPA and other Federal agencies to address the degradation of coastal and estuarine waters and their living resources. The Chesapeake Bay Program, with its 1987 Chesapeake Bay Agreement, has established a strong foundation for coordination.

QUESTION 5. In response to the Subcommittee's question regarding issues not included in the Bay Agreement, we have one suggestion. There is an "objective," but not a "commitment," in the Bay Agreement which deals with the need for adequate freshwater flows to the Bay to maintain estuarine productivity. Population trends for the next decade indicate a substantial increase in the

population living in or near the coastal zone. These individuals will require drinking water and other services. At present, the provision of adequate, safe drinking water supplies is a problem in some areas. In addition, there is generally a lack of regional or basin-wide planning to make the most efficient use of what water is available. We recommend that this objective be made a full commitment to include the establishment of a Bay-wide minimum-instream-flow policy and methodology and that this policy require basin-wide planning to be based on the needs of living resources. Given that the Agreement is directed at the restoration of the Bay's living resources, we believe that basing the instream-flow needs on their requirements is appropriate. The Chesapeake Bay Agreement provides the perfect mechanism for encouraging interagency coordination (NOAA, Corps of Engineers, Fish and Wildlife Service, EPA, Susquehanna and Potomac River Basin Commissions, and the States and District of Columbia) to deal with this emerging problem.

QUESTION 6. The Subcommittee's final question requests suggestions for other estuarine programs. One clear success story of NOAA's involvement in the Chesapeake Bay clean-up effort has been in the area of research coordination. NOAA's activities have enabled scientists from Maryland and Virginia to conduct cooperative research on high priority environmental issues affecting Chesapeake Bay. Between 1985 and the present, over 30 scientists from the two States have been able to participate in

coordinated, interdisciplinary investigations of the processes responsible for initiating and maintaining summer hypoxia in the Bay, and the resulting effects of low dissolved oxygen levels on fish and shellfish populations. These cooperative studies often have supplemented research, education, and outreach efforts undertaken as part of the Virginia and Maryland Sea Grant programs. The Bay community has benefitted in several ways, including the use of in-place communications and advisory capabilities to disseminate findings to target audiences. Also, the knowledge gained from this directed and applied research program is supplying the Chesapeake Bay Program with critical data for use in the development of the three-dimensional, time-variable, water quality model of the Chesapeake, which will be used to test solutions for alleviating the oxygen depletion problems in the Bay.

Developing and implementing sound management practices for any estuary requires that we understand not only the functioning of the terrestrial and aquatic systems that compose estuaries, but also land - coastal sea interactions. This objective requires support for fundamental research on estuarine processes and the effects of natural and man-induced variations on these processes. NOAA's Chesapeake Bay oxygen depletion study is a model of a coordinated approach to applied estuarine research, and it could be transferred to other estuary programs now getting underway through the National Estuary Program.

Mr. Chairman, this completes my prepared statement. Thank you for the opportunity to respond to your questions on this important matter.

DEPARTMENT OF DEFENSE (DoD) RESPONSES
TO QUESTIONS SUBMITTED BY THE
SENATE SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION
ON THE CHESAPEAKE BAY RESTORATION PROGRAM

Question 1:

The Chesapeake Bay Program was authorized in the Clean Water Act Amendments of 1987. Are changes or improvements to this Act or other environmental laws (e.g., Coastal Zone Management Act, Food Security Act of 1985, Emergency Striped Bass Act, Federal agencies' authorizing legislation) needed to enable you to accomplish the objectives of the Chesapeake Bay program and the 1987 Bay Agreement?

Answer:

One of the Water Quality commitments of the 1987 Bay Agreement calls for a "40 percent reduction of nitrogen and phosphorus entering the mainstem of the Chesapeake Bay." The nutrient strategy developed to meet this goal calls, in part, for "nitrogen removal programs at 40 larger Maryland waste water treatment plants and substantial reductions in phosphorus at 27 Virginia treatment plants." This proposed strategy would affect all wastewater treatment plants in these two states which discharge more than one million gallons per day, including five DoD facilities, by modifying existing wastewater discharge permits.

DoD agrees that additional nutrient reductions are needed for further improvements in the Bay ecosystem to occur. However, we believe that a broad brush nutrient reduction strategy is not supported by existing scientific evidence. The Chesapeake Bay Implementation Committee, in its February 1988 report, "A Commitment Renewed: Restoration Progress and the Course Ahead Under the 1987 Bay Agreement," states that "strategies to reduce nutrient enrichment of the Bay must take into account the relative importance of the various nitrogen and phosphorus sources." DoD agrees, and feels the proposed strategy does not adequately address this important consideration.

Specifically, we do not think additional nutrient removal requirements should be required at smaller waste water treatment plants (those with discharge rates less than ten million gallons per day) until their efficacy at larger plants is fully evaluated. Costly new treatment requirements should not be required until their benefits can be fully demonstrated.

In addition, DoD feels that all nutrient reduction options should be targeted first at those tributaries and regions of the Bay where benefits to living resources would be greatest and most immediate. For example, our November 1987 report, "Water Quality Assessment of DoD Installations/Facilities in Chesapeake Bay Region," identifies specific geographic regions where improvements at our installations would be most beneficial. The proposed strategy does not identify areas where living resources would benefit most from nutrient reductions.

We also feel the strategy does not adequately address the contribution of nonpoint sources to nutrient loadings. For example, the Chesapeake Bay Program has estimated that nonpoint sources contribute 67% of total nitrogen loadings in an average year, mostly from croplands. Voluntary programs to implement "best management practices" have measurably reduced nonpoint source nutrient loadings. We feel additional attention should be directed to improved management procedures to further reduce nonpoint loadings.

Finally, recent studies have suggested two other sources significantly contribute to the Bay's overall nutrient problem, acid rain and nutrients released from sediments. Neither source is addressed in the nutrient strategy.

Question 2:

What additional legislation, Federal funding or program resources are needed to assure effective implementation of the commitments made in the Bay agreement?

Answer:

The 1987 Chesapeake Bay Agreement contains goals and priority commitments to promote restoration of the Bay in six categories: living resources; water quality; population growth and development; public information, education, and participation; public access; and governance.

Section 117 of the Clean Water Act (CWA) establishes the Chesapeake Bay Program. Section 319 addresses nonpoint source pollution. The CWA also establishes the National Pollutant Discharge Elimination System (NPDES), to regulate point source discharges. The Coastal Zone Management Act (CZMA), Maryland's Chesapeake Bay Critical Area Protection Law, and other legislation address pollutant sources that could affect the Bay.

DoD feels existing legislation is sufficient to achieve effective implementation of the Agreement.

Question 3:

What improvements could be made in interagency cooperation and coordination?

Answer:

The existing Chesapeake Bay Program management structure is a model which other estuarine programs should emulate. Coordination between the Federal government and state signatories has been enhanced by the Principal Staff Committee and the Chesapeake Bay Implementation Committee. The various subcommittees which work with and report to the Implementation Committee, such as the Citizens Advisory Committee, the Scientific and Technical Advisory Committee, and the Federal Agency Committee, have insured representation and input from all interested parties.

Question 4:

How can the Federal government coordinate environmental response to deal with coastal degradation problems in a more comprehensive fashion?

Answer:

According to EPA, twelve federal agencies administer "at least 21 programs affecting the near coastal water environment." These regulations and programs are sometimes duplicative, and sometimes act at cross-purposes. DoD feels an integrated management strategy for our near coastal waters would reduce the uncertainty and contradictions which currently exist.

Question 5:

What new initiatives should be undertaken to supplement those outlined in the Bay Agreement?

Answer:

As discussed in Question 2, DoD feels that existing legislation is sufficient to achieve effective restoration of the Bay. The Bay Agreement effectively complements this legislation with a schedule of commitments which is comprehensive and far reaching. Rather than attempting to modify a model Agreement with additional commitments, DoD feels that resources should be directed on achieving those commitments already in place. Evaluation and follow-up of existing commitments should take precedence over the establishment of new initiatives at this time.

Question 6:

Based on your experience with the protection of the Chesapeake Bay, do you have comments or suggestions for the design of programs to protect other estuaries or coastal areas around the country?

Answer:

DoD believes the existing organization of the Chesapeake Bay Program is effective and comprehensive, and should be considered, with minor modifications, as a model for other estuarine programs.

The specific commitments established by the 1987 Bay Agreement have been an important focus for the Bay restoration effort. It is important to proceed from general goals to specific objectives such as these as soon as possible.

DoD has found that it is extremely important to establish lines of communication between all participants as soon as possible. We have benefited from participation of formal structures such as the Implementation Committee and Federal Agencies Committee, and from conferences and workshops sponsored by both Federal agencies and citizen groups.

In regional efforts, such as the Chesapeake Bay Program, it is essential that all participants become partners with similar commitments and shared goals. For example, the participation of Pennsylvania is absolutely essential to the success of the Bay restoration program.

Legislative oversight and public accountability have been important factors in promoting the success of the Chesapeake Bay Program.

It has been difficult for the Bay Program to get an accurate, complete assessment of research that has been conducted on the Bay, as well as the priorities for funding future research needs. An independent evaluation of research priorities is suggested.



ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240



In Reply Refer To:
FWS/LS

OCT 7 1988

Honorable George J. Mitchell
Chairman, Subcommittee on Environmental Protection
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

In response to your request for comments for the record of your September 20 hearing on the Chesapeake Bay Program, enclosed are responses of the U.S. Fish and Wildlife Service (Service) to your questions.

The Service commends you for your review of progress in restoring the Bay's water quality, and we are pleased to provide these comments for the hearing record.

Sincerely,

Assistant Sam Marler
Assistant DIRECTOR

Enclosure

STATEMENT OF DIRECTOR FRANK DUNKLE, U.S. FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR, FOR THE RECORD OF THE SEPTEMBER 20, 1988, HEARING OF THE SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION, COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS, CONCERNING THE CHESAPEAKE BAY PROGRAM

The U.S. Fish and Wildlife Service appreciates the opportunity to submit testimony concerning the progress of the 1987 Chesapeake Bay Agreement. The Service has been involved with this effort since 1984. At that time, we signed a Memorandum of Understanding with the Environmental Protection Agency establishing our role in the implementation of the Bay program. Our role primarily involves restoration of the Bay's living resources, including waterfowl, anadromous fish and submerged aquatic vegetation. Progress on these commitments has been remarkable. However, much still remains to be done to hasten the recovery of the Bay.

Until recently, the Service's Bay program has been implemented by our Ecological Services field office in Annapolis, Maryland. I have determined, however, that the 1987 agreement, particularly the emphasis placed on the restoration of living resources, requires special emphasis by the Service. Therefore, I have established a new Chesapeake Bay Estuary Program as a separate entity within the Service. The program will be headed by Mr. William Ashe, formerly the Deputy Regional Director of the Service's Northeastern region. Mr. Ashe's extensive experience as a resource manager and his knowledge of Bay issues make him particularly well suited to this responsibility.

Before responding to the questions posed in your letter, I would like to summarize the Service's involvement in the program. Our work is focused in five major areas: living resources, striped

bass, nonpoint source pollution, point source pollution, and public awareness.

Living Resources -- A major portion of our work has involved assessing the status of the Bay's migratory birds (particularly waterfowl), anadromous fish, and submerged aquatic vegetation. The Chesapeake Bay has long been considered the most important wintering area for waterfowl along the Atlantic Coast. About 1.5 million waterfowl winter here each year between October and April. For some species, the Bay is the most important wintering area in the United States, or even in the world. Recognizing this fact, the International Union for the Conservation of Nature recently designated the Chesapeake as being of "international waterfowl importance."

Our activities with regard to anadromous fish have focused on the need to provide passage at the numerous dams and other structures that prevent shad, river herring and other fish from reaching their historical spawning grounds in the upper reaches of the Bay's tributaries. The Service also is a member of a Federal/State/private task force that has developed a strategy for enhancing fish passage in the Bay. These activities indicate the priority accorded this issue under the new Bay agreement.

Much emphasis has also been placed on monitoring the Bay's submerged aquatic vegetation. These grasses, critical to the health of the Bay, provide food and shelter for diverse communities of waterfowl, fish and shellfish, as well as a multitude of invertebrate animals. Furthermore, they help to improve water quality by oxygenating water, filtering and trapping

sediments, and buffering excess nutrients such as nitrogen and phosphorous. Given the importance of these plants to the Bay's ecosystem, it is disturbing that well over half have disappeared from the Bay's waters over the past 20 years.

The Service assists in funding annual surveys and mapping efforts to identify the locations and abundance of these grasses, has completed a study on population trends over the past five years, and is developing a semi-technical identification guide for these plants. We also head a workgroup that is developing a restoration policy and Bay-wide management plan for this important resource.

Striped Bass -- Another important aspect of the Bay restoration program is the recovery of the fishery resources, especially striped bass. A significant part of that effort is the production of fingerling striped bass at hatcheries. These young fish are being released into the Bay to augment the wild populations and to assess migration patterns and survival rates.

The Service is also cooperating with Maryland and Virginia in a tagging program designed to gather data on important aspects of the species' life cycle. Fishermen who catch a tagged fish are requested to notify the Service. The data gathered from the tagging effort will be used by Federal and States agencies to develop a coast-wide management plan for the species. The future of this program is contingent upon continued funding for the Service's Striped Bass Stocking Program.

Nonpoint Source Pollution -- Nonpoint pollution is perhaps the most pervasive threat to the health of the Bay. The runoff of

nutrients (nitrogen and phosphorous) encourages the growth of microscopic algae, which clouds surface waters. These algal "blooms" prevent sunlight from reaching submerged vegetation. Furthermore, as the algae dies, the decomposition process robs the water of oxygen needed by fish and other aquatic organisms.

The Service has been active in assessing the impact of nonpoint source pollution on the Bay's living resources. A major effort has recently been completed to identify sub-watersheds within the Upper Choptank River that contribute disproportionate levels of nutrients. The results of this study will be used to help Federal and State agencies target limited funds available for the installation of Best Management Practices in those areas where water quality has been most affected.

Point Source Pollution - The Chesapeake Bay has received toxic contaminants from a variety of sources over the past hundred years. These sources include industrial effluents and other point sources, as well as contaminated dredge spoils. Toxic materials entering the Bay include heavy metals, synthetic organic compounds, petroleum hydrocarbons and other substances such as chlorine.

The Service designed a program to assess the impacts of contaminants on Bay fauna and flora. Assessments have been done at point sources and Superfund sites. Relatively new monitoring techniques such as histopathology and bioassays were used in conjunction with the standard body-burden, sediment, and water analyses. These various analyses should establish linkages

between water/sediment quality and the relative health of living resources.

Public Awareness - The Service has played a lead role among Federal agencies in making the public aware of the threats to Bay resources, as well as the steps each individual can take to help restore the Bay. We are working closely with several school systems to develop Bay-related material that can be used by teachers in their curriculum. We have developed and published numerous brochures, fact sheets, and other informational materials that are distributed to schools and civic associations. Pictorial displays have been developed for use at various events, such as Chesapeake Appreciation Days.

The centerpiece of our public awareness effort is "Chessie" the friendly Bay monster. Chessie was first introduced to the public in a story/coloring book developed by the Service for use in elementary schools. Chessie has been enormously successful and recently received national recognition when the Service won a "Take Pride in America" award for its Bay public awareness campaign. A mascot-type costume of the legendary Bay monster has been made for the Service and is now used in conjunction with our public affairs work.

With that general background, our responses to the six specific questions raised in your letter are as follows:

- 1) The Chesapeake Bay program was authorized in the Clean Water Act Amendments of 1987. Are changes or improvements to this Act or other environmental laws need to enable you to accomplish the objectives of the Chesapeake Bay program and the 1987 Bay Agreement?

We believe that the Federal government has sufficient statutory authority to accomplish the objectives of the Bay restoration program and do not recommend amendments to the Clean Water Act or other Federal environmental laws for this purpose. In some areas, however, increased coordination and a common understanding among Federal agencies about the interpretation of the regulations would be helpful.

For instance, with respect to determining which wetlands are subject to Section 404 of the Clean Water Act, there is disagreement in some situations between the Corps of Engineers on the one hand and the Environmental Protection Agency and the Fish and Wildlife Service on the other. An example of a disputed area is forested wetlands on the Eastern Shore. The Corps of Engineers does not claim jurisdiction, but the Service and the Environmental Protection Agency believe these areas should be covered by the Corps' regulatory program.

Specifically with regard to the Clean Water Act, the draft Wetlands Policy of the Chesapeake Bay Executive Council was recently made available for public comment. This policy calls for a review of the effectiveness of existing regulatory programs to identify corrective actions. The Service and other Federal agencies will be involved in this effort, and we will inform you of the results of the review.

- 2) What additional legislation, Federal funding or program resources are needed to assure effective implementation of the commitments made in the Bay Agreement?

As I mentioned, the Service is currently reorganizing its Bay program to better meet our expanded responsibilities for living

resources under the new Agreement. It seems clear that the Environmental Protection Agency and the States are looking to the Service to take a more active role in funding and directing activities related to wetlands, submerged aquatic vegetation, waterfowl, and anadromous fish. Since we are in the beginning stages of developing our Chesapeake Bay Estuary Program, however, it is not yet clear whether additional resources will be required, or whether this work can be accomplished through redirecting existing Service funding. If any additional resources are required, they would be recommended as part of the Service's annual budget submissions.

3) What improvements could be made in interagency cooperation and coordination?

Generally, good cooperation and coordination exist among the various agencies involved in the Bay Restoration program. The organizational structure established during the early days of the program helps to ensure that the various activities are widely reviewed and supported at the Federal, State and local levels. Roles and responsibilities have been defined in memoranda of understanding between individual Federal participants and the Environmental Protection Agency, and in the so-called "Griddle Book," which outlines specific tasks to be completed, the responsible agencies to conduct the tasks, and the dates by which they are to be accomplished.

As with any program, there are always areas that could be improved. Employees participating in Bay activities are working within the program to address these deficiencies. The previously mentioned draft Executive Council wetlands policy identifies

specific actions that should be taken to improve Chesapeake Bay wetland protection. The policy notes the limitations of Federal wetland protection efforts, such as the lack of a prohibition on the draining of wetlands, and calls for the States to "implement protection standards for those areas and activities not adequately protected under Federal law."

Similarly, a workgroup composed of representatives from Federal and State agencies and the Chesapeake Bay Foundation is devising a cooperative strategy for providing fish passages at dams, culverts and other obstructions that prevent anadromous fish from reaching upstream spawning grounds.

Thus, problems that may exist with interagency coordination are being identified and addressed within the structure of the Bay Restoration Program.

- 4) How can the Federal government coordinate environmental responses to deal with coastal degradation problems in a more comprehensive fashion?

It is essential that one agency or entity be clearly designated as the lead for coordinating restoration efforts in each coastal area or estuary. Congress followed such a procedure when it designated the Environmental Protection Agency as the lead in the Chesapeake Bay Restoration program. Other actions, such as the development of memoranda of understanding between the Environmental Protection Agency and each Federal participant in the Bay program, have helped to further clarify roles on activities such as monitoring, mapping, pollutant assessment, and resource management.

It is critical that the States be an integral part of these efforts. Many of the problems that need to be addressed, such as controlling nonpoint source pollution, must be approached through local mechanisms, such as zoning ordinances. In some instances, technical and possibly financial assistance will be necessary to enable these localities to undertake efforts such as the implementation of best management practices for agriculture.

5) What new initiatives should be undertaken to supplement those outlined in the Bay Agreement?

Several recently enacted laws dovetail well with the initiatives outlined in the Bay Agreement. The 1985 farm bill, in particular the Conservation Reserve and Swampbuster provisions, complements wetland conservation activities under the Bay program. The Emergency Wetlands Resources Act, which calls for the acquisition of priority wetlands, also complements the program. It would be desirable to identify new ways in which these laws could be implemented to promote the goals of the 1987 Bay Agreement.

For example, nonpoint pollution is clearly the most pervasive threat to the Bay's living resources. An existing program, such as the Conservation Reserve Program authorized by the 1985 farm bill, could be used to encourage farmers to utilize forest buffer strips along waterways as one of the best management practices instituted on Reserve lands. Cost-sharing funds provided under the program could be targeted to those areas where runoff problems are most severe. Similarly, the area-wide planning documents developed under section 208 of the Clean Water Act could focus more directly on specific nonpoint pollution problems and set

forth specific recommendations concerning best management practices to address these problems.

Regional variations in the implementation of the Section 404 program could be explored. For instance, the directive for the Nationwide Permit No. 26 program, issued by the Corps of Engineers, authorizes the filling of up to 10 acres of wetlands, as well as the placement of fills of less than one acre for projects located above the headwaters of a non-tidal stream. In the Bay, however, these areas are often critical for the growth of submerged aquatic vegetation and for nursery areas for numerous Bay fish species. Thus, the Norfolk and Baltimore Corps Districts are exploring the idea of regional conditions that would place greater restrictions on the issuance of these nationwide permits in certain areas of the Bay watershed.

A third example is the advanced identification procedure which the Environmental Protection Agency may undertake pursuant to the Clean Water Act to identify wetland areas deemed unsuitable for development. The intent of this effort is that, by designating these areas during the early planning stages of projects, development can be steered to more environmentally suitable sites. The Fish and Wildlife Service is now working with the Agency to undertake a major effort of this sort in the Bay watershed. By working closely with State and local Agencies that have undertaken or are about to undertake similar efforts, we hope to provide increased protection for the Bay's dwindling wetland resources.

Finally, the Service will emphasize existing programs, such as the North American Waterfowl Plan, that focus on restoration of the Nation's waterfowl and anadromous fishery resources.

- 6) Based on your experience with the protection of the Chesapeake Bay, do you have comments or suggestions for the design of programs to protect other estuaries or coastal areas around the country?

Virtually all of the country's major estuaries are facing the types of problems being addressed in the Chesapeake Bay Restoration program. Both the Environmental Protection Agency and the National Oceanic and Atmospheric Administration have initiated national programs to begin to assess these problems. Work is being conducted in Long Island Sound, Narragansett Bay, Albemarle-Pamlico Sound, Puget Sound, and San Francisco Bay.

Based on the Service's experience in the Chesapeake Bay, I would offer the following comments:

First, it is essential that the roles and responsibilities of the Federal, State and local participants be clearly defined.

Second, the primary objective of such programs should be the restoration of each estuary's living resources. It is not enough to restore water quality. Healthy populations of fish, waterfowl, and plants are the true indicators of a healthy aquatic ecosystem.

Third, an estuarine restoration program must have a habitat component. In addition to protecting wetlands and aquatic habitats, in certain situations, upland areas that are adjacent to these habitats should also be protected since they contribute to the healthy functioning of the aquatic system by reducing runoff and pollution.

Fourth, steps must be taken to address nonpoint source pollution problems, probably the major threat to estuarine areas. Much of the responsibility for this task will fall to State and local governments, since virtually no Federal regulatory programs address this problem.

Finally, the involvement of the public in the restoration effort is absolutely critical. Informing the public on the value of estuarine resources, the threats that face them, and

the contributions that each individual can make in addressing these threats should be an integral part of any estuarine restoration program.

Thank you again, Mr. Chairman, for the opportunity to present the views of the U.S. Fish and Wildlife Service on the Chesapeake Bay Restoration program. The continued support of the public and the Congress is essential to the success of this effort. The Service welcomes the Committee's on-going oversight as an important medium to maintain the "Save the Bay" message.



United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VA 22092



In Reply Refer To:
WGS-Mail Stop 440

OCT 20 1988

Honorable George J. Mitchell
Chairman, Subcommittee on Environment Protection
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510-6175

Dear Mr. Chairman:

The following responds to your letter of September 14, 1988, in which you asked that we provide written testimony in support of your hearing on September 20, 1988, to review the progress of programs to clean up the Chesapeake Bay. You asked specifically for us to provide comments on six issues, as follows:

1. **The Chesapeake Bay Program was authorized in the Clean Water Act Amendments of 1987. Are changes or improvements to this Act or other environmental laws (e.g., Coastal Zone Management Act, Food Security Act of 1985, Emergency Striped Bass Act, Federal agencies' authorizing legislation) needed to enable you to accomplish the objectives of the Chesapeake Bay program and the 1987 Bay Agreement?**

The water-related mission of the U.S. Geological Survey (USGS) is to conduct research in the hydrologic sciences, appraise the Nation's water resources, and provide hydrologic information. Our authorizing legislation provides ample authority to participate, as requested, in those aspects of the Chesapeake Bay program.

2. **What additional legislation, Federal funding or program resources are needed to assure effective implementation of the commitments made in the Bay Agreement?**

Our ability to implement our commitments in the Bay Agreement is evaluated on a yearly basis through the annual budget process. If, in the course of that review, we determine that any additional resources are required, those resources would be requested as part of the USGS annual budget submission.

3. **What improvements could be made in interagency cooperation and coordination?**

Meetings involving up to 10 Federal agencies have already been held to discuss various agency projects related to the Bay program. The meetings have involved both top level managers and technical staffs, who have exchanged ideas on how best to coordinate projects. These exchanges have been highly beneficial in scoping out preliminary plans for interagency activities. We believe that these existing coordinating mechanisms are adequate, but would like to point out that it is critical that the technical staffs continue to be consulted as Federal policies are proposed and formulated.

Honorable George J. Mitchell

2

4. **How can the Federal government coordinate environmental response to deal with coastal degradation problems in a more comprehensive fashion?**

We believe that existing coordinating mechanisms are adequate and have so testified in recent hearings on proposed ground-water legislation.

5. **What new initiatives should be undertaken to supplement those outlined in the Bay Agreement?**

Three technical suggestions are offered for enhancing our ability to identify sources of contamination to the Bay and thereby improve restoration efforts.

a. An assessment of ground-water flow to the Bay could be undertaken. Currently, information on the quantity and quality of ground-water flow to the Bay is inadequate to assess its impact on overall Bay water quality.

b. Studies on sediment transport and measurements of geologic processes could be undertaken. These would enable us to better understand how sediments and contaminants are transported within the Bay and where these materials are ultimately deposited. Such studies would also serve as a data base to predict and measure future changes in Bay conditions.

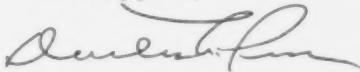
c. The demonstration Geographic Information System (GIS) data base established in the Elizabeth River basin could be expanded to the entire project area to provide improved analytical capabilities in order to more quickly and accurately resolve the complex issues involved in Bay restoration.

6. **Based on your experience with the protection of the Chesapeake Bay, do you have comments or suggestions for the design of programs to protect other estuaries or coastal areas around the country?**

Any program designed to restore and protect estuaries or coastal areas will require adequate information on the many complex, interrelated factors that influence the quality and quantity of water flowing to these areas. In most cases, this information is not adequate to permit analysis and interpretation of the problems. Thus, the first step in any restoration/protection program must be the careful design and implementation of an effective data collection, management, and dissemination process.

Thank you for the opportunity to provide this information to you for inclusion in the hearing record.

Sincerely yours,



Dallas L. Peck
Director



CHARLES CENTER • P. O. BOX 1475 • BALTIMORE, MARYLAND 21203

EDWARD A. CROOKE
PRESIDENT

October 3, 1988

Honorable George J. Mitchell
United States Senate
176 Russell Building
Washington, D.C. 20510-6175

Dear Senator Mitchell:

Thank you for the opportunity to express the views of the Baltimore Gas and Electric Company on the progress of programs to cleanup and restore the Chesapeake Bay. The Baltimore Gas and Electric Company has strongly supported the Chesapeake Bay Program from its inception in 1977 with active participation in the citizens advisory role as well as numerous programs directed specifically at the Maryland portion of the Chesapeake Bay. We consider our environmental personnel to be well-informed on the cleanup and restoration of the Chesapeake Bay and in a position to provide thoughtful advice. It is appropriate to examine the progress of a cooperative program such as the Chesapeake Bay Program to insure forward movement and accountability.

Attached are the comments you requested which address the five issues identified in your letter of September 14, 1988.

Sincerely,

The Chesapeake Bay Program

1. The Chesapeake Bay Program was authorized in the Clean Water Act Amendments of 1987. Are changes or improvements to this Act or other environmental laws (e.g., Coastal Zone Management Act, Food Security Act of 1985, Emergency Striped Bass Act, Federal agencies' authorizing legislation) needed to enable you to accomplish the objectives of the Chesapeake Bay program and the 1987 Bay Agreement?

In the Clean Water Act Amendments of 1987, EPA was authorized to establish and maintain an Office of Chesapeake Bay Programs. This Office represents EPA's central role and EPA's accountability for the Chesapeake Bay Program. Two of the mandated functions which are critical to the success of the Chesapeake Bay Program are first, to collect and to make available information pertaining to environmental quality of the Bay and second, to coordinate state and federal efforts to improve water quality.

The Chesapeake Bay Liaison Office in Annapolis, Maryland serves as the central EPA Chesapeake Bay Office. There is a program director whose functions are primarily administration of EPA moneys and coordination of the Federal programs. This is a difficult function particularly when accountability is diffused across several programs and federal acts. There is a need for a program director whose function is the central, accountable position for coordination of federal and state programs and the central data management function as a logical outcome of the enhanced coordination role. Let me give you several examples of a need for improved coordination. The three states in implementation of Section 304(1) of CWA of 1987 are all different in approach but the data generated could be coordinated. The Discharge Monitoring Reports for the NPDES program are computerized in Maryland and Virginia but not in the same format or a central location which would enhance the toxics database for the Bay. This coordination and data management functions must be given greater emphasis to avoid re-inventing programs and redundant production of data. The person in charge of the EPA Office should have the authority to carry out this mandate.

Changes to the Clean Water Act Amendments of 1987 are presently not advisable because many of the programs have not been fully implemented. Emphasis should be placed in implementing the non-point source and pre-treatment aspects of the Act as well as older more well-established point source programs.

Although there may be very specific controversial issues on other environmental legislation, i. e. Alternative Conservation Practices in the Food Security Act, it is far more important to adequately fund, staff and evaluate the existing provisions of environmental laws.

2. What additional legislation, Federal funding or program resources are needed to assure effective implementation of the commitments made in the Bay Agreement?

Federal funding for implementation of non-point source pollution management, particularly for toxics. Congress has noted that "... as much as 50 percent of the pollution in our waters is estimated to be caused by non-point sources ...". At this time the percentage may be much higher since the Superfund Act Reauthorization Amendments (SARA) Title III reporting of chemicals indicates that about five percent of the chemicals are discharged by point sources to surface water. In the Chesapeake Bay basin in addition to stormwater (both urban and agricultural), groundwater, atmospheric non-point sources, and contaminated sediments in Baltimore Harbor and the Elizabeth River may be major non-point sources of toxic chemicals. However, the baseline information does not exist to appropriately guide toxics cleanup management and major resources are needed to establish this baseline. The Chesapeake Bay basin could be a paradigm for toxics management for the nation.

3. What improvements could be made in interagency cooperation and coordination?

Federal interagency cooperation has improved over the last few years but coordination could be enhanced by stronger Federal oversight by the EPA Chesapeake Bay Office. The interstate cooperation needs to be strengthened. Part of the problem may be the lack of resources in the states and the same few people carry the responsibility for strategy development and implementation in addition to their regular responsibilities.

4. How can the Federal government coordinate environmental response to deal with coastal degradation problems in a more comprehensive fashion?

The National Estuary Program (Section 317 of CWA of 1987) with the management conference concept appears to be an excellent vehicle for the initial planning to deal with regional issues. A valuable asset is available if Federal information (Safe Drinking Water Act, RCRA, SARA, CWA, CAA and Food Security Act and others) from divergent sources on an area are coordinated in preparation for the management conference.

5. What new initiatives should be undertaken to supplement those outlined in the Bay Agreement?

The initiatives in the Chesapeake Bay Agreement are very comprehensive. The strategies have evaluation times identified which allow mid-course corrections. No new initiatives are needed at this time because the identified initiatives have not been implemented or evaluated for effectiveness.

6. Based on your experience with the protection of the Chesapeake Bay, do you have comments or suggestions for the design of programs to protect other estuaries or coastal areas around the country?

Baltimore Gas and Electric Company has been represented on various committees of the Chesapeake Bay Program since 1977. Based on this experience, here are several comments on the transfer of program design from the Chesapeake Bay to other areas of the country. The committee management structure has worked for the Chesapeake Bay Program but I don't think that this structure is key to the present success of the Program. The first coordination and cooperation in the program was in the scientific community in the original research program. The scientific cooperation would have been less useful if strong public participation had not demanded coordination of information and explanation of the findings and recommendations in layman's language. Most regulatory managers are not technocrats and information must be understandable. Public participation was a mechanism to provide information at a grassroots level and facilitate agreement on the major needs for the cleanup. I strongly suggest that other programs could learn both from the mistakes and successes of the Chesapeake Bay Program.

ENVIRONMENTAL DEFENSE FUND

Plantation House
1108 East Main Street
Richmond, VA 23219
(804) 780-1297

September 19, 1988

The Honorable Senator George Mitchell
Senate Committee on Environment
and Public Works
408 Hart Senate Office Building
Washington, D.C. 20510

Re: Comments to the Subcommittee on
Environmental Protection: Oversight
Hearings on the Chesapeake Bay Program

Dear Senator Mitchell:

The Environmental Defense Fund (EDF) would like to submit the following comments for the Committee's consideration with respect to the Chesapeake Bay Program. We very much appreciate the opportunity to comment and hope that the Committee finds our information useful.

As always, should you or any of your staff desire further information or elaboration of any issue raised by EDF, we would be most happy to assist in any way.



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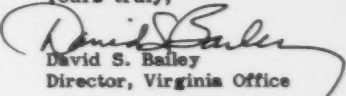
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Yours truly,


David S. Bailey
Director, Virginia Office

Enclosures

COMMENTS OF THE ENVIRONMENTAL DEFENSE FUND
SUBMITTED TO THE
SUBCOMMITTEE FOR ENVIRONMENTAL PROTECTION
OF THE COMMITTEE ON THE ENVIRONMENT AND PUBLIC WORKS
OVERSIGHT HEARINGS ON THE CHESAPEAKE BAY PROGRAM
September 20, 1988

The Environmental Defense Fund (EDF) is a not-for-profit national environmental organization dedicated to the elimination of unintentional exposure to toxic materials. EDF has over 60,000 members and six offices nationwide, and operates on a budget of over seven million dollars. Since its founding in 1967 to seek controls over the use of the pesticide DDT, EDF has maintained had a long history of scientific and legal interest in toxic issues. Through its offices in New York, Washington, D.C., Virginia and North Carolina, EDF has operated programs in estuarine and marine protection for many years. EDF's Virginia office particularly has been involved in issues regarding the Chesapeake Bay for the last eight years.

The comments submitted today reflect the experience and concerns of EDF scientists and attorneys who have experienced first hand the problems and challenges facing the Chesapeake Bay and its tributaries. We gratefully appreciate the opportunity to submit these comments and welcome your inquiries and requests for further information on any of the issues discussed.

The Chesapeake Bay Today

Without question, the Chesapeake Bay today is benefiting from a literal explosion of concern and interest among citizens, industry and local, state and federal government. Legislation at both the state and federal level is breaking new ground in toxics control, land use and water quality protection. Although the Bay and its aquatic life have been suffering from neglect and abuse for many decades, and cannot be expected to rebound in any short period of time, the Bay nonetheless has shown hints of the tremendous restorative powers inherent in the environment when given a chance. Education of the public has mobilized public awareness, concern and commitment. As with any major undertaking, also inherent in this process is the opportunity for waste, abuse and short sighted decisions; and the ever present threat that the size, time and financial commitments required may wane over the long term required to complete the task. Thus, for these and other reasons, Congressional oversight is not only appropriate but essential to continued progress in cleaning up the Chesapeake Bay.

The Clean Water Act Amendments Of 1987: A Bold Step by Congress. A Mammoth Job for States

The Clean Water Act Amendments of 1987 signaled a new and vigorous response to the continued failure of the national program to adequately address toxic pollutants in the nation's waters. Before the amendments, toxic programs had been stifled by the slow development of water quality criteria by EPA and the inability, or refusal, of states to move forward aggressively on toxic standards. There are many reasons for the situation that had developed prior to the 1987 amendments. However, we believe that the major reason delays have persisted is because of the inherent difficulty in any state imposing water quality conditions different from other states. While the basic premise of the 1972 Act recognized that some state waters would require the application of "water quality limits" rather than merely BPT limitations, every state has had difficulty reconciling the effects of such water quality standards imposition on future industrial growth among competing states.

As a result, while many states followed through with the imposition of water quality limitations with respect to dissolved oxygen, a standard which every state was required to have and easily subject to EPA and citizen review, nearly every state sought equally to avoid the imposition of the often extremely low levels associated with toxic pollutants. State water quality criteria were often shuffled about as guidelines or "criteria", with a different legal meaning than "standards"; application of permit effluent limits was often less than water quality criteria pending further data review, or stream studies, or often, nothing. States balked at imposing limits for toxics claiming that they were waiting for EPA guidance. States routinely refused to fund large scale ambient water quality surveys to determine the level of toxics in receiving waters, and declined to force dischargers, for legal or political reasons, to accept that responsibility. By 1987, Congress could clearly see that the explicit expectations of the "water quality effluent limitations" of the 1972 Act had not been met, and would not be met into the foreseeable future without further action.

The 1987 amendments sought to change this picture and to some extent they have, but some problems do remain. The new amendments require the states, within the period of the next "triennial review" of state standards, to adopt and use the EPA criteria in setting permit limits. The amendments also require the use of biological assessment methods to establish limitations where there are no published standards. The use of biological methods to set permit limits may well prove to be the single most important change to NPDES permitting. However, other than the basic requirement to use such methods, Congress has left development and implementation up to EPA and the states, with no guarantee that the same forces which acted to neutralize the toxic criteria requirements of the original Act will not come to bear here as well.

Congressional oversight in the implementation of biological assessment methods is the first area that EDF identifies as critical to administration of the Act, and its successful implementation in cleaning up the Chesapeake

Bay. And it goes to the heart of one of the basic issues in the Bay cleanup: toxic pollution.

Toxic pollution, while not the root cause of the Bays ills, remains a serious impediment to restoring the Bay's overall health, and an important factor in the ecosystem's ability to deal with other stresses. EDF sees the toxics problem in the Bay divided into two general areas: "hot spot" and multiple source.

The two outstanding locations or "hot spots" in the Bay are Baltimore Harbor and the Elizabeth River. Both areas have been identified as containing both sediment and water pollution stemming from decades of past abuses and discharges, in a water system incapable of rapid dilution, flushing or cleansing. Water quality in the Elizabeth River is so bad that fish cannot live in the system for more than a short time without developing skin lesions, cancers and disease. The shellfish beds are closed, fishing is practically nonexistent and the area has a predominant industrial character (although the waterfront is being rapidly developed). Without belaboring the issue, there is strong agreement among Bay scientists that these two bodies of water especially need attention.

Cleanup of the Baltimore Harbor and the Elizabeth River will not be easy; it may even be dangerous to try. Heavy deposits of pollutants in river sediments make their removal costly and difficult. The intensity of industrial and shipping development make day-to-day water quality protection very difficult. The States are not equipped financially to handle this burden, or at least to resolve the problems in any short time frame. A special program is needed to explore control strategies for these Bay "hot spots". The program should not only evaluate cleanup and restoration but long term management of these locations for multiple uses.

Multiple source toxic pollution is generally made up of NPDES dischargers, industrial runoff and municipal runoff (excluding for now nonpoint source land runoff). These sources are regulated primarily by the NPDES permit program and more directly, come under the 1987 amendments which require the identification of all areas which do not meet water quality criteria for toxics. This identification program, which triggers a requirement under the Act that permits be issued accordingly to correct criteria violations, is the ultimate weapon in the amendment's attack on water bodies failing to meet toxic standards. The program is utterly dependent, however, on individual states monitoring ambient water quality and identifying such areas and the toxics in violation.

Many states, including the Bay states, however, have no such data. Ambient monitoring for even the named toxic compounds in the Act has not been routinely performed on ambient waters. Most states will have little more data than the Form 2c reports submitted by NPDES applicants at permit renewal time. The monitoring of ambient water quality for the Act's toxic compounds simply will not be achieved. States will attempt to rely upon existing 305(b) reports and whatever other data they can muster to evaluate existing waters.

If the state fails to identify any noncompliance with the specified toxic compounds, then no requirement is triggered to adjust discharge permits.

The lack of reliable ambient water quality monitoring over the past, and expected into the future, is a very serious problem. For example, Virginia, the state that has been most aggressive in developing water quality standards for TBT, has already begun to cut back on its monitoring of that critical toxic compound. Yet the state still has no idea of the full extent of water quality standards noncompliance. By not collecting data, generally viewed as discretionary by the state, there will be insufficient data to gauge whether compliance with the Act's water quality requirements have been met, and little recourse available to EPA or citizens attempting to enforce the Act. Without data, the 1987 amendments may be little more than a paper exercise.

To remedy this problem, at least for the Bay, Congress should ensure that EPA requires each state to demonstrate the adequacy of monitoring data to confirm or deny compliance with the Act's expectations with respect to water quality evaluation. Congress should make funds available to EPA and the Bay states to establish a Bay wide ambient water quality monitoring network that would serve not only to evaluate toxics compliance but to monitor progress and trends as well.

Bioaccumulative Compounds: The Special Case for Action

Considering all of the toxic problems that have plagued the nation's waters in recent history, one finds that most were either bioconcentrated by higher organisms or bioaccumulated. By both the nature of the toxicity and the mechanism of toxicity, compounds which are concentrated or accumulated by higher animals are nearly always a serious threat to the environment. The list of toxic compounds which contaminate the environment for the long-term, in food, in product and in toxic action, have been traditionally the most difficult to control: Lead, mercury, kepone, to name a few. As these hearings on the Bay are held, TBT contamination reaches into shellfish and fish from coast-to-coast, its potential impact on human consumption still being evaluated.

If there has been any record of repeated failure to act in time to prevent serious pollution, it has been with bioconcentration/bioaccumulative compounds. Under the 1987 amendments to the Act, and under the current Chesapeake Bay Program, bioaccumulative evaluation still remains largely ignored.

Apparently because Congress employed the term "biological assessment" methods without specifying control of "bioaccumulative" pollutants, states have been free to gain EPA approval of biological assessment programs that do not address bioaccumulative compounds. Virginia just completed the adoption of its toxic regulations designed to implement the Act's biological assessment requirements. While initially proposing an aggressive bioaccumulative evaluation program, Virginia completely abandoned the effort after industry pressure. EPA has indicated that it will approve Virginia's program.

Virginia's actions are not an isolated event. Virginia has declined to fund monitoring for TBT contamination in shellfish, known to be significant in some harbor areas. Virginia has also refused to sample fish and shellfish for dioxin in the York River, a major tributary to the Bay, even though a large paper mill utilizing the bleached kraft process, now known to be contaminated with dioxin, discharges to the river. Maryland's program is even less developed.

Reluctance to deal with bioaccumulative potential seems to stem from several problems. States are woefully equipped to evaluate the environmental and human health consequences of bioaccumulative materials. There is a logical desire not to risk concern or public rejection of state seafood resources without cause, or unduly restrict natural resources. And, as a practical matter, the sale of contaminated food in interstate commerce is controlled by FDA, not by any state. The combination of state resource difficulties and federal primacy has often resulted in an abdication of responsibility to federal agencies which are, in fact, often unable to respond either until after widespread contamination has already occurred.

All of these factors should, however, dictate just the opposite result. Public demand and expectation is for food and fiber free of contaminants, not merely polluted by unevaluated compounds. Aquatic resources in particular are amenable to monitoring and biological assessment methods, and to allow such resources to become so contaminated as to warrant national evaluation is a needless and senseless risk. Yet, many states continue the proverbial "head in the sand" approach to bioaccumulative compounds.

An aggressive program to survey, evaluate and regulate bioaccumulative compounds is feasible under current biological and chemical measurement technologies. The early detection and control of such compounds could be of immense value in preventing future contamination incidents, and in restoring and maintaining public confidence in seafood resources. EPA should be required to incorporate methods for assessment of bioaccumulative programs in all state programs, and especially in the Bay.

Nutrient Control: The BMP Dilemma

The single most important factor in the decline of the Chesapeake Bay is nutrient enrichment. Nitrogen and Phosphorus, pouring into the Bay from municipal and industrial discharges, farm and city run-off and from air emissions have combined to enrich the Bay with algae, increase turbidity and eliminate dissolved oxygen from huge areas every summer. Nutrient control has been rightly identified as one of the highest priorities of the Bay program.

Present efforts to control nutrient enrichment fall into two general categories, point and nonpoint sources. Point sources efforts, through NPDES permitting, are furthest along. Virginia, for example, has just begun a program which will require every major municipal discharge on tributaries to the Bay to achieve a discharge limitation of 2.0 mg/l phosphorus. Most

dischargers will employ some form of biological nutrient removal (BNR) technology which will also remove substantial amounts of nitrogen. Combined with phosphate detergent bans and other actions, Virginia hopes to meet its goal of 40% phosphorus reduction on schedule.

As impressive as the Virginia program is, it belies the full scope of the problem. Initial modeling efforts have hinted that even removal of all point source inputs of phosphorus into the Bay would have little effect by itself. The heavy contribution of nitrogen and phosphorus from nonpoint sources simply overwhelms the point source input. These nonpoint sources, primarily agricultural, urban and air, must be dealt with.

Nitrogen from the air alone has been estimated to be as much as 25% of the total nitrogen input to the Bay. The nation's failure to control NO_x emissions from utilities and automobile exhaust is contributing tremendous nitrogen loads to estuarine embayments, while industrial and municipal NPDES discharges are required to limit nutrient discharges to the limits of practical technology.

The nonpoint source program remains largely voluntary, spurred on by repeated incentives and payments from state and federal governments. It is a voluntary program swimming against basic economic principals which will never permit a large scale success. The economics of voluntary "best management programs" was thoroughly evaluated in a recent article in the Journal of the Water Pollution Control Federation. (See "Diffuse (nonpoint) pollution- a political, institutional and fiscal problem", vol. 60, no. 8, 1988).

The conclusion was that voluntary BMP's cannot be expected to produce the results that are required, nor stand the test of the market place. If nonpoint sources of nutrients are to be effectively controlled, as indeed they must, some regulatory institution of BMP programs must take place. These might include, but not be limited to expansion of the NPDES permit program to include certain nonpoint source functions, expansion of programs such as the 1985 Food Security Act and other planning programs geared to the nonpoint source problem. Nonpoint source pollution programs must be reconsidered and accepted or rejected on the basis of performance in a manner comparable to that expected of the NPDES program for point sources.

The Chesapeake Bay drainage is a logical place to begin BMP regulation. Such regulation may be instituted across the Board, or by "trigger", where the required objectives of nutrient reduction cannot be achieved by voluntary controls. The time is fast approaching when there will be no choice: maximum feasible removals from point sources are at hand and the imbalance between the public and private commitment for point and nonpoint source controls is too great to ignore. Congress should request the EPA to begin a study to evaluate regulatory implementation of BMP programs, in concert with present state and federal voluntary programs, to ensure that nonpoint source nutrient input is reduced to the most practical and feasible level.

The Shellfish Industry: in serious trouble

The shellfish industry has traditionally been one the most significant industries of the Bay, both in terms of food resource and folklore. The industry now, however, is in very serious trouble. Over the years, shellfish beds have been steadily lost to the increasing growth of marinas, shore line development and nonpoint source pollution. A serious natural enemy of the oyster, the diseases dermo and msx, has depleted oyster stocks to the point that the industry is nearly shut-down in Virginia. Even more troubling, without the effects of disease, oyster "spat-fall" or successful reproduction up to the setting of new oyster larvae, has been extremely low in many areas of Virginia for the past three years. The combination of low reproduction and extensive losses by disease could have catastrophic consequences on future oyster survival.

Some programs have been instituted to correct the problems. Chlorine discharges, long suspect for larval oyster toxicity, are being reduced, although slowly. Virginia has embarked on an expansive program to try to reopen closed beds, although the state is continually forced to review projects that would impose further condemnations. New Virginia laws on land use zoning and water quality may have a favorable impact, but are still one to two years away from implementation.

Although there are programs in place to address these issues, Sea Grant and others, the general view among marine scientists is that they are underfunded and spread far too thin. For the Bay, the needs seem especially acute at this time. It may not be too radical to say that the future of the natural oyster industry may well depend on how well we respond to these latest setbacks. Many scientists are already talking as if artificial culture of oysters is the only viable option left.

EDF recommends that specific programs, with stated goals and objectives, be established for the oyster industry as a whole. These would include the already existing programs to restore closed beds, but would be expanded to monitor the loss of beds as well, and the overall health of the oysters themselves, to include research on diseases such as dermo and msx and the steady decline of oyster reproduction.

Fisheries Habitat Management: where are the important areas?

All of the Bay States have established fishery management programs, to include new computer programs and research efforts to "manage" fishery stocks. We seem well along in such programs that will enable us to impose size or catch limits on species to match their availability and population in any given period. These programs are essential to fishery management, of course, but they often do not address the crucial questions about the needs of the fishery to reproduce, grow and successfully compete in the environment. For many fish species, one might well ask where do the fish spawn, what are their needs and what areas are crucial to their various life stages? And, unfortunately, there is all too often no answer.

Identification of critical areas for fish, shellfish, and other estuarine life is crucial to management of Bay resources for multiple uses. And once potential areas are identified, a management scheme is needed to utilize the resource in the most efficient manner. One example of the problems we face involves the number of impoundments blocking fish migration in the James and Rappahannock Rivers, both relatively clean river areas offering potentially 50 or more miles of upstream spawning areas each but for impassable dams. New dams, restricting even more movement, are an ever present concern.

EDF recommends that the current fishery management programs be expanded to include identification of critical fishery areas, and the appropriate management programs to protect those areas from loss. Specifically, we recommend increased experimentation and evaluation of opening upstream areas of the James and Rappahannock Rivers to migrating fish species such as the herring, shad and striped bass. Congress may wish to consider matching or incentive grants to states to encourage state funding of such passageways.

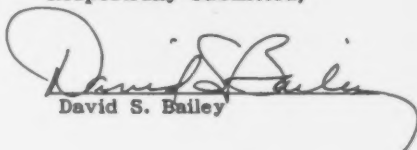
Conclusion and Recommendations

EDF recommends the following actions:

1. That Congress follow closely the implementation of biological assessment methods by EPA and the States. A specific report from the EPA Administrator may be appropriate.
2. That Congress consider special programs for the cleanup of the Baltimore Harbor and Elizabeth River areas, as well as long term management strategy for multiple uses.
3. Congress should take steps to ensure that EPA requires the States to adequately characterize ambient water quality compliance with toxic pollutants. Additional funding should be considered to establish and maintain ambient monitoring for toxics in the Chesapeake Bay.
4. Assessment of compounds with the potential to bioconcentrate and/or bioaccumulate should be required as part of the biological assessment programs under the Clean Water Act amendments of 1987.
5. The use of voluntary BMP programs should be reconsidered and regulatory programs instituted where equivalent reductions in nutrient pollution are not being achieved.
6. Research efforts should be increased into oyster diseases and oyster reproductive failure; increased emphasis should be placed on reopening and maintaining present oyster grounds.

7. Existing fishery management programs should be expanded to include evaluation of critical fishery areas and their protection. Strong consideration should be given to providing financial support for fish passage ways for anadromous fish in the James and Rappahannock Rivers.

Respectfully submitted,


David S. Bailey

Environmental Defense Fund
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Richmond, Virginia 23219
804-780-1297



Hampton Roads Water Quality Agency

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September 30, 1988

The Honorable George J. Mitchell
United States Senate
Chairman, Subcommittee on Environmental Protection
Washington, D.C. 20510-6175

Dear Senator Mitchell:

Thank you for your letter of September 14, 1988 requesting my comments on a number of issues related to the Chesapeake Bay clean-up effort. Your letter listed six questions. The comments which follow are numbered in accordance with those questions.

- 1) To help accomplish the objectives of the Chesapeake Bay clean-up the Clean Water Act should be amended to reauthorize direct EPA funding to areawide (old Section 208) water quality planning and management agencies. Under the present Section 205(j) program funding is insufficient to continue indepth and comprehensive planning and management of unique local water quality problems.

I firmly believe that the clean-up of the Bay will ultimately be dependent on local governments and their management of growth and its impact on natural resources. To assure their response is well founded, professional expertise at a level of government closer to them than the State or Federal level will be necessary. Support of areawide agencies which have been successful and have maintained a presence will be fundamental in accomplishing that objective.

- 2) Implementation funding for nonpoint source management as authorized in the Clean Water Act should be appropriated and targeted to areas which have identified their nonpoint source problems at a fairly local/regional level.

Also, the Chesapeake Bay Local Government Advisory Committee which was recently formed should be supported meaningfully with adequate funding and professional staff. Further, their mission should be truly interactive with the Bay Executive Council wherein an interchange occurs in terms of discussing the problems and opportunities of local government in responding to Bay clean-up mandates from higher levels of government.

Stormwater and nonpoint source management initiatives are contained in the Bay Agreement. Much of the burden of implementing these will be placed on localities. Funding assistance, especially for areas requiring retrofitting of BMPs should be provided from the State and Federal level.

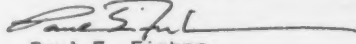
- 3) In the Hampton Roads, Virginia area, improving Federal Facility (military bases, etc.) compliance with the objectives of Federal environmental legislation would be most helpful.
- 4) No comment other than applicable suggestions above.
- 5) Improving public access to the Bay is one objective of the Agreement. This will entail substantial funding needs which can best be met through State and Federal assistance to localities.
- 6) As suggested above, we are entering an era where the final incremental steps to protecting environmental quality will occur through land use management. Since that is a traditional role of local government it stands to reason that cities, counties and towns need to be afforded a more meaningful role in the development of State and Federal implementation plans. We are starting to see a recognition of that in the Bay region. That local role must be continued and encouraged through a partnership arrangement with the State and Federal level, rather than a continuation of the more historic adult/child relationship.

In parts of the Bay region, areawide water quality management plans were developed in the late 1970s and early 1980s. Those plans, in many cases, are an excellent blueprint for action for many of the initiatives in the Agreement. They should be used by the States and Federal agencies as a means of expediting and targeting clean-up efforts where they will be most cost-effective.

I have tried to be brief yet still touch on the general areas of improvement which I think will assist Bay clean-up. If you would like additional information on the suggestions above, please feel free to call on me at any time.

Thank you very much for providing me with the opportunity to comment.

Very truly yours,

A handwritten signature in dark ink, appearing to read "Paul E. Fisher", with a long horizontal flourish extending to the right.

Paul E. Fisher
Project Director

September 26, 1988

Honorable George J. Mitchell, Chairman
Subcommittee on Environment Protection
Committee on Environment and Public Works
United States Senate
Washington, DC 20510-6175

Dear Senator Mitchell:

I am responding to your letter of September 14, 1988 requesting written comments on the progress of the Chesapeake Bay restoration. With respect to the specific issues outlined in your letter, the following comments are submitted:

- Issue 1. The Chesapeake Bay Program was authorized in the Clean Water Act Amendments of 1987. Are changes or improvements to this Act or other environmental laws (e.g., Coastal Zone Management Act, Food Security Act of 1985, Emergency Striped Bass Act, Federal agencies' authorizing legislation) needed to enable you to accomplish the objectives of the Chesapeake Bay program and the 1987 Agreement?*

The legislation mentioned above provides an excellent foundation for the federal/states partnership inherent in the 1987 Chesapeake Bay Agreement. The Emergency Striped Bass Act needs further reauthorization and should be amended to sunset at the same time as Amendment #3 of the Atlantic States Marine Fisheries Commission Plan.

- Issue 2. What additional legislation, Federal funding or program resources are needed to assure effective implementation of the commitments made in the Bay Agreement?*

The commitment regarding "living resources monitoring" needs a measure of financial support from the federal budget. If the relationship between water quality/habitat quality and the reproduction and survival of the living resources is ever to be deciphered, traditional water quality monitoring activities must be juxtaposed with living resources monitoring.

- Issue 3. What improvements could be made in interagency cooperation and coordination?*

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INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN

Hon. George J. Mitchell, Chairman
 September 26, 1988
 Page -2-

The interagency cooperation and coordination are impressive. Perhaps the weak link lies in the non-point source arena. The voluntary nature of the implementation of most of the non-point source control programs will make the restoration efforts less effective. Point source control activities are beginning to balk at further regulation until non-point sources controls are mandatory.

Issue 4. How can the Federal government coordinate environmental response to deal with coastal degradation problems in a more comprehensive fashion?

Greater standardization is required with respect to water quality standards, wetlands protection, harvesting of fish, non-point source controls, and toxics control.

Issue 5. What new initiatives should be undertaken to supplement those outlined in the Bay Agreement?

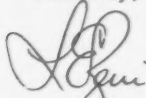
None until the 1991 reevaluation decision. At that time, the need for new initiatives may be more evident.

Issue 6. Based on your experience with the protection of the Chesapeake Bay, do you have comments or suggestions for the design of programs to protect other estuaries or coastal areas around the country?

In retrospect, the goal setting of the 1987 Chesapeake Bay Agreement provides greater impetus and focus than the original 1983 Agreement. The analyses needed to determine actions to meet specific goals, such as the 40% nutrient reduction, encourages realistic evaluation of the resources and programs needed to restore and to protect estuaries and coastal areas.

Thank you for the opportunity to provide comments. I would be pleased to write in greater detail on any of the above.

Sincerely,



L.E. Zani
 Executive Director

LEZ/pr



Marine Trades Association of Maryland, Inc.

"Working Together For The Marine Industry"

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September 19, 1988

Hon. George J. Mitchell, U.S.S.
Chairman, Subcommittee on
Environment Protection
Washington, DC 20510-6175

Dear Chairman Mitchell & Members of the Subcommittee:

Thank you for your letter of September 14 requesting written testimony for the Subcommittee on Environmental Protection hearing on clean up and restoration of the Chesapeake Bay. To facilitate your effort, the Marine Trades Association of Maryland (MTAM) will respond to each of your six issues independent of each other. Our specific comments are as follows:

Question 1:

The MTAM has no specific recommendations on changing the Clean Water Act Amendments of 1987. We feel those comments are best made by government and environmental groups who respond to the Act on a regular basis in meeting the objectives of the 1987 Bay Agreements.

Question 2:

Of top priority in the Chesapeake is improvement in sewage treatment plants and establishing new plants where necessary. Development along the Bay shoreline has progressed to the point where sewage treatment facilities are inadequate. This is a tremendous expenditure however the issue must be addressed even if it means the federal government must propose that Maryland, Virginia, Pennsylvania, and the District of Columbia propose dedicated tax revenues to work on the issue. I know legislators do not like dedicated taxes, but when we look at what must be done in the area of sewage treatment, it seems there is little choice... see sample news story attached.

What laws that do exist pertaining to sewage or other environmentally dangerous discharges should be enforced. Most people in the private sector find it ludicrous that someone is fined a small amount for toxic waste discharge or spill - so little that it is worth paying for the fine rather than fixing the problem causing the discharge.

P. O. Box 3148 • Annapolis, Maryland 21403

Question 3:

This is an age-old question and issue. What usually works best is to have a central point of coordination for the agencies to respond to - without a central voice, too many bureaucrats are "reinventing the wheel", shirking responsibility or leaving the private sector at a loss on who to talk with on an issue.

Crossfeeding of information is good, but who is the one source ultimately responsible? This is the office which should be established and held accountable on environmental or Chesapeake Bay issues.

Question 4:

See number 3 - my response applies here as well.

Question 5:

We should look at the enhancement of all living resources and particularly our shellfish and finfish populations. What regulations or legislation needs to be developed to respond to population increases, development impact and point and non-point pollution sources.

Question 6:

During the last ten years I have spent considerable time with the boating community and commercial watermen. I have authored two books on the Bay which will be out in October 1988... one specifically dealing with Maryland watermen. Our problems and issues are not unique and they are not easily solved.

One of the most important issues that Americans who live in a watershed areas must realize is that what they do in their homes or businesses will impact on the watershed even if it's hundreds of miles away. We have not educated the general public very well on this issue. For example, how can we convince a mechanic in Frostburg, MD that used oil he spills will harm the Chesapeake Bay which is four hours by car away from his shop?

We must educate our children on these environmental issues and, here again; we have problems mandating to the local school systems on what they teach. It cannot, however, be ignored.

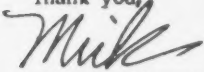
Local or regional environmental task forces or groups should be created, under government auspices, and include environmentalists, business leaders, educators, community leaders and so on from a watershed to get "across the board" feedback and input of issues. Elected officials create legislation, but they only respond to votes, therefore, include people who influence a constituency and make

changes in that regard with these task forces.

While there are many other issues of importance here I think that my comments, though generic, can be developed by your staff. At the very least, the members of the maritime community and perhaps residents wonder why it takes so long for government to react to specific problems. As a waterman said not too long ago, "We've studied this Bay to death, when are we goin' to do somethin' with all that studyin'?"

I appreciate your inquiry. If I can be of further assistance, please don't hesitate to call me personally.

Thank you,



Mick Blackstone
Executive Director

Enclosures



Natural Resources
Defense Council

1350 New York Ave., N.W.
Washington, DC 20005
202 783-7800

October 4, 1988

The Honorable George J. Mitchell, Chairman
Committee on Environment & Public Works
458 Dirksen Senate Office Building
Washington, DC 20510-6175

Dear Senator Mitchell:

Thank you for affording NRDC an opportunity to comment on the Chesapeake Bay Program's toxics reduction strategy.

I enclose for the hearing record NRDC's recently-completed comments on the Bay Agreement Signatories' draft outline for a toxics reduction strategy. The thrust of NRDC's view is that the Bay Agreement signatories need to use current Clean Water Act requirements more effectively as a beginning point for basinwide toxics controls.

NRDC will continue to monitor the toxics control activities of the Chesapeake Bay states, and to provide the Committee with copies of our comments and testimony.

Sincerely,

A handwritten signature in cursive script, reading 'Jessica C. Landman'.

Jessica C. Landman
Clean Water Program Attorney

Enclosures: Draft Outline for a Basinwide Toxics Reduction
Strategy
NRDC's Comments on the Draft Outline

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New England Office:
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Toxic Substances
Information Line:
USA: 1-800 648-NRDC
NYS: 212 687-6862



*Natural Resources
Defense Council*

1350 New York Ave., N.W.
Washington, DC 20005
202 783-7800

COMMENTS OF THE NATURAL RESOURCES DEFENSE COUNCIL, INC.
ON THE
CHESAPEAKE BAY WATER QUALITY TASK GROUP'S
DRAFT OUTLINE FOR
A BASINWIDE TOXICS REDUCTION STRATEGY

September 20, 1988

Submitted by:

Jessica C. Landman, Clean Water Program Attorney

Paul Thompson, Clean Water Resource Specialist

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The Natural Resources Defense Council, Inc. (NRDC) is a national environmental organization dedicated to protecting human health and the environment and to preserving natural resources for this and future generations. NRDC has over 91,000 members, of whom more than eleven thousand reside in the states within the Chesapeake Bay's watershed. NRDC and its members have a longstanding interest in protecting and improving water quality. In particular, we are concerned with the need to reduce or eliminate the discharge of toxic pollutants into surface waters. We therefore welcome the opportunity to participate in the development of the Chesapeake Bay Agreement signatories' Basinwide Toxics Reduction Strategy.

At the September 7th public meeting of the Water Quality Task Group, NRDC staff presented some suggestions for strengthening and improving the Draft Outline for the Basinwide Toxics Reduction Strategy. We also agreed to submit these written comments.

The level of detail contained in our comments is influenced by the remarks made by Bernard Caton, who chaired the Task Group meeting. Mr. Caton indicated that the Task Group has already begun to write the draft strategy itself, and that the draft outline did not include many of the details already fleshed out in the strategy. Since we have no desire to reinvent the wheel by developing a toxics reduction strategy from scratch at the same time that the Task Group is doing so, we intend to await the public issuance of the draft strategy to provide more detailed comments on the strategy itself. For future reference, it might

be more efficient for the Task Group to time the circulation of draft policy documents so that public comment on the first iteration can be incorporated into the subsequent iteration readily. That being said, we submit the following suggestions for the Toxics Reduction Strategy, focusing primarily on the Clean Water Act responsibilities presented to the Bay States:

INTRODUCTION: The Baywide Strategy Should Build on, and Move Beyond, the Bay States' Preexisting Legal Responsibilities

The Clean Water Act presents the States¹ that are signatories to the Bay Agreement with a series of important mandates to protect and enhance water quality. The Bay States face the added challenge of trying collectively to protect and enhance the unique Chesapeake Bay ecosystem. That task will require a coordinated effort that builds on -- and goes beyond -- compliance with the Clean Water Act's basic toxics control requirements. It should be the goal of the Baywide Toxics Reduction Strategy to create the framework -- and the concrete commitments -- for coordinated toxics control by the signatories.

A Baywide strategy should reflect jointly-coordinated actions in every field of the toxics control endeavor, from monitoring to standard-setting to compliance enforcement. It should eliminate duplications of effort, so that limited resources can be stretched as far as possible. And it should ensure that all Bay States benefit from one another's pollution

¹ "State," as defined in the Clean Water Act, includes the District of Columbia. CWA Sec. 502(3). References in these comments to Bay States include the District.

control efforts. At the same time, the strategy should ensure that no one Bay State becomes the dumping ground for the other States' toxics problem, or the recipient of **apparent** economic benefits from allowing industry, agriculture or developers to undertake in one Bay state environmentally-degrading activities that are prohibited in another.

Unfortunately, the "Draft Outline For Basinwide Toxics Reduction Strategy" ("outline") does not accomplish these goals. Instead, it tends to focus on describing the problem of Bay toxics, and on describing the States' individual existing toxics control programs. While an understanding of existing programs is helpful, and is an important prerequisite for deciding how to move beyond meeting the basic Clean Water Act program requirements, it does not go far enough. The outline, and the strategy which is to follow, need to go further. We provide below some suggestions for strengthening the States' strategy, which we hope will prove helpful.

I. Collective Commitment to Cleaning Up the Bay

A. Thinking Regionally

Historically EPA and the States have focused on implementing toxics controls under the Clean Water Act on a State-by-State and facility-by-facility basis through individual NPDES permits.² However, in addition to the traditional tools of

² Section 208 plans, intended to address nonpoint source pollution, have not fulfilled their promise even on a state-by-state basis. Nor do 208 plans effectively take into consideration regional planning needs.

the State-delegated NPDES program the Act provides a number of important regional pollution control mechanisms that States can and should use to facilitate "thinking regionally" as they develop and implement toxics controls. For example, Section 103 of the Act provides that the Administrator "shall encourage cooperative activities by the states," including "the enactment of improved and, so far as practicable, uniform state laws relating to the prevention, reduction, and elimination of pollution." CWA Sec. 103(a). The Act also encourages the establishment of interstate agencies and compacts to facilitate pollution control and prevention. CWA Sec. 103(b).

Section 319(g) of the CWA provides for the convening of an Interstate Management Conference to develop an interstate agreement on reducing nonpoint source pollution. Section 320 authorizes the Administrator to convene Management Conferences for estuaries through which the participating states can

develop a comprehensive conservation and management plan that recommends priority corrective actions and compliance schedules addressing point and nonpoint sources of pollution to restore and maintain the chemical, physical and biological integrity of the estuary...

CWA Sec. 320(b)(4).

Finally, the Chesapeake Bay Program office is authorized under the CWA to "coordinate Federal and State efforts to

improve the water quality of the Bay," CWA Sec. 117(a)(2),³ and to provide grants for coordinated programs. Sec. 117(a)(1).

Creative, productive use can be made of these elements of the Act, which recognize that water pollution problems do not respect State boundaries.⁴ The Bay States should attempt to view their NPDES and NPS management programs as regional water quality management programs that can work best together under centralized leadership.

As we discuss below in more detail, this approach to NPDES permit issuance and NPS management for toxics control makes sense only if the Bay States work collectively and cooperatively on all aspects of toxics control, from effective data collection and monitoring activities and water quality standard-setting through consistent enforcement. Once key elements have been agreed upon, then each signatory State can begin working towards the implementation of its specific responsibilities to control toxics discharges into the Bay.

³ The Conference Report on the 1987 WQA, establishing the Chesapeake Bay Program Office, makes special note that "the Administrator shall consider the need to provide for effective control of nonpoint sources of pollution to the Bay." H. Conf. Rept. 1004, 99th Cong. 2d Sess. at 93 (Oct. 15, 1986).

⁴ Section 510 of the Act specifically protects the right of an interstate agency to adopt and enforce limitations and requirements more stringent than national standards. Congress clearly anticipated that interstate agreements to control pollution might need to be more restrictive than the national minimum.

In addition to lacking a creative approach to regional coordination, the outline's statement of commitment also is missing two other key elements: commitments of time and money.

B. Time

The strategy's statement of collective commitment should go beyond agreeing to develop, adopt and "begin implementation of" a baywide strategy. It should include a firm, continuing commitment, over time, to implement fully and to enforce vigorously the basinwide strategy. Specific timetables should be included for each element of the strategy. While the signatories' commitments will need to extend indefinitely, it will not be possible to plan toxics reduction strategies with precision too many years into the future. To ensure the States' continued commitment to shared goals, the strategy should include a concrete commitments to reconvene the toxics reduction decision-makers periodically (for example, every two years) in order to establish the next set of firm timetables and milestones.

C. Money

To achieve ambitious toxics reduction goals the Bay States undoubtedly will have to spend more money. Because all Bay states benefit from the toxic control activities of their fellow signatories, it is appropriate for each participant to make (and to receive) dollar and staffing commitments for the Bay cleanup. The toxics reduction strategy should include firm commitments to seek necessary funding, whether from the States' legislative

bodies, from Congress, through existing CWA grants or the revolving loan fund program, or from other sources (such as increased permit fees, etc. (This commitment must in turn be based on collective commitments to provide minimum agreed-upon levels of, e.g., inspection frequency; enforcement personnel; research funds, etc.)

Experience has shown that providing a dedicated source of funding for important programs can be a helpful way to ensure stable progress. We suggest that the signatories include in their strategy a commitment to develop dedicated funding sources to support Bay toxics reduction programs such as watershed-wide fertilizer and pesticide surcharges; land sales transactions fees; stormwater utilities, or other such devices.

II. Toxics Assessment

The draft outline recognizes the need for a Baywide toxics inventory. However, as presently written it does little to move beyond -- or even take advantage of -- preexisting assessment/inventory responsibilities and preexisting assessment efforts of the States. The strategy should move the signatories towards a better-coordinated toxics assessment program that is geared towards the toxics reduction goals.

A. Using Existing Programs

The Clean Water Act already requires that each State identify and develop individual control strategies for all toxic

hotspots.⁵ The requirements for toxic hotspot identification, including the various data sources that each State must review, already are spelled out in the EPA's final 304(1) guidance document.

Similarly, Section 319 of the Clean Water Act already requires the States to identify waters impaired or threatened by nonpoint sources of pollution (including nonpoint sources of toxics) and to develop management plans to reduce such impairments or threats to the maximum extent practicable. CWA Sec. 319(a)(1)(C). As with Section 304(1), EPA has issued guidance setting out the minimum requirements for States' Sec. 319 identification and management program submissions.

Further, under Section 305(b) of the Act the States already must gather and report on water quality trends biennially to EPA, to measure progress in achieving water quality standards. EPA provides guidelines for each biennial reporting cycle that

⁵ EPA has interpreted Section 304(1), the "toxic hotspot" provision of the Act, to mean that individual control strategies are required only for toxic hotspots appearing on the States' "short lists" -- i.e., only for those waters that the State does not expect will meet applicable water quality standards even after the Act's technology-based requirements are met, due entirely or substantially to discharges from point sources of priority pollutants. NRDC disagrees with that interpretation; in our view, the Act requires an individual control strategy for each hotspot appearing on each of the State's toxic hotspot lists. A copy of NRDC's comments on the draft EPA 304(1) guidance document is attached, and is incorporated by reference into these comments.

In seeking to control all sources of toxics, the Bay States should treat the individual control strategy requirement of the CWA as NRDC believes that Congress intended: They should commit to developing control strategies for each listed toxic hotspot, whether it appears on their "short lists" or their "long lists."

establish minimum reporting standards for the States to follow in assessing and water quality trends.

The Bay states already have developed the Point Source Atlas, identifying industrial and POTW dischargers with the potential to discharge chlorine, metals, organics or other toxic pollutants.⁶

Finally, Sec. 313 of the new Superfund Amendments and Reauthorization Act of 1986 (SARA) already requires that a number of categories of industries report annually to EPA and the States on the quantities of certain toxic chemicals they release to air, land or water. The first of these Toxic Release Inventories (TRIs) was due on July 1, 1988. The TRIs provide each State with a good first estimate of the total quantities of many important toxics being emitted and discharged in the watershed and airshed of the Bay.

In light of these preexisting legal duties, in order to be meaningful the Bay agreement signatories' commitments to identify and assess toxics in the Bay must go beyond simple descriptions of existing programs and commitments to meet minimum requirements of the Act. Instead, the strategy should use the Act's requirements as a point of departure for developing a coordinated and comprehensive toxics assessment and identification program that improves upon these minimum requirements.

⁶ Chesapeake Bay Liaison Office, "Point Source Atlas," May 5, 1988.

Coordinated Data Collection and Reporting

The strategy should commit to bringing together the officials from the Bay States who are responsible for conducting the 305(b), 319 and 304(1) inventories and assessments, so that they can develop a plan of action to use, and use consistently, the same data sources and reporting formats to amass the required information. The Bay States' monitoring and inventorying databases should be fully compatible, so that useful information about the watershed as a whole can be shared and manipulated with the greatest ease. The signatories should commit to making the most thorough possible search of existing data, and to collecting further information as needed.

The States should reach agreement -- in time for the submission of final Sec. 304(1) lists and the next 305(b) report -- on consistent toxics reporting approaches. For example, in the area of point source toxics identification and assessment, the Bay agreement signatories should fully coordinate their Sec. 304(1) toxics hotspot identification processes. The EPA's 304(1) guidance requires that each State develop and submit to EPA the procedures that it will follow to develop its list of impaired waters, identify sources and pollutants, and prepare individual control strategies. The Bay signatory States should utilize EPA as a central reviewing and coordinating authority to help them arrive at consistent (and wherever possible, uniform) hotspot identification procedures, including screening criteria values,

water quality assessment techniques, data sources, etc. (See EPA 304(1) guidance at 9.)⁷ The strategy should make the same commitment for the reports and management plans to be submitted under Sec. 319 for nonpoint source controls.

Similarly, the Sec. 305(b) reporting process as presently constituted provides States with a good deal of flexibility in deciding how to report on water quality, and in how much detail. The Bay Agreement signatory States should commit to reaching consensus, in time for the next 305(b) reporting cycle, on consistent minimum reporting approaches that will enable easy and consistent reporting, sharing and manipulation of databases. Moreover, since Sec. 305(b) establishes only minimum reporting requirements but gives the States flexibility to report in more detail if they so choose, the Bay signatory states should agree jointly to gather and report a sufficiently detailed level of information to effectively advance their joint toxics control goals. This may well require going beyond the minimum level of reporting mandated by Sec. 305(b).

Finally, the Section 313 inventories to be submitted by industries in the States⁸ provide a good first attempt at assembling in a consistent manner an estimate of toxics released

⁷ See also CWA Sec. 103(a).

⁸ The following manufacturing industries are included: food; tobacco; textiles; apparel; lumber; furniture; paper; chemicals; rubber; leather; building materials; glass; metals; electrical materials; transportation equipment; instruments and medical goods; petroleum refining; primary metals industries; printing and other miscellaneous manufacturing industries.

to the environment. However, as a Virginia hazardous waste management official noted during the September 7 meeting (and as Maryland's representative agreed), the current Section 313 reporting requirements are not adequate to meet the needs of the Bay States.

When the 1987 Sec. 313 reporting form was published EPA indicated that it would propose revisions for subsequent reporting forms. 53 Fed. Reg. 4500, 4503-4 (Feb. 16, 1987). Public comments suggesting appropriate revisions, and later on, formal comments on the draft proposal, should be submitted. The Bay states should commit to reaching collective agreement on the changes needed to improve the Section 313 reporting form (including, for example, improvements in reporting on rates of emissions, and the addition of any industrial categories important to the Bay States but not covered in the 1988 inventory) and to jointly submitting their proposed changes to the Environmental Protection Agency. This coordinated request for improved reporting is far more likely to meet with a favorable reception at EPA than a number of un-coordinated separate requests, particularly if the Bay Program Office joins in the request; moreover, it would result in uniformly acceptable improvements in the Sec. 313 database if adopted.

B. Focusing on Pollutants of Concern

The draft outline suggests that the signatories place their initial focus on Sec. 307(a) priority pollutants in assessing water quality problems. While this notion has some appeal

because of its simplicity, it will miss important pollutants already known to be a problem in the Bay. For example, ammonia, chlorine⁹ and tributyltin, all problems in the Bay watershed, are not Sec. 307(a) pollutants. Moreover, whole effluent toxicity -- which should be controlled through permit limits for all industrial and POTW dischargers to the Bay watershed -- is not a priority pollutant. EPA's Section 304(l) guidance specifically instructs the States to deal with all known toxics problems as they develop individual control strategies; the Bay States should not ignore information about toxicity problems simply because the pollutant is not on the 307(a) list.

C. Coordinating the Search for Additional Pollutants of Concern

While the draft outline mentions "commit[ting] to initiate a process" for identifying additional pollutants of concern in the Bay, it should specify what that process will be and the timetable for its implementation. What is needed is a regularized means for bringing together State water quality officials and scientists to consider new pollutants in need of control.

The most logical framework for this task is the existing one provided by the States' mandatory triennial reviews of water quality standards. As we discuss below, it would be most useful

⁹ As long ago as 1983 the Bay Program singled out chlorine control as a toxics reduction "must" for the Bay. See "Chesapeake Bay Program: Findings and Recommendations, U.S. EPA, Region 3, September 1983, at 45. See also Point Source Atlas at 9, and tables 16 and 17.

for the Bay states to time their triennial review processes so that they occur on the same cycles. The States should be prepared to coordinate agreement on new pollutants of concern early enough in each triennial review and revision cycle so that all Bay States can adopt numerical criteria for newly-identified problem toxics at the same time.

The same principles outlined above, with respect to assessment of toxics, apply with equal force to the states' ongoing monitoring efforts (see outline at 5, "Measuring Progress"). A coordinated program for monitoring pollutant discharges should be part of the Baywide strategy, including a Baywide minimum of monitoring and self-reporting requirements for all newly-revised or -issued NPDES permits. The target date for agreeing on unified monitoring should be no later than the deadline for completion of the 304(1) lists and strategies: February 1989.

Similarly, coordinated accounting methods also should be in place no later than February 1989. We recommend that accounting methods be geared towards water quality assessment rather than simple "bean-counting." For example, it is useful to know the number of dischargers subject to TRES, but accounting for actual water quality improvements is more critical for measuring progress.

III. Water Quality Standards

It is evident that the Bay States need to have consistent water quality standards for all toxics of concern in the watershed. While the outline talks about placing in the strategy a hortatory statement in support of consistent standards, it does not firmly support or commit the states to, adoption of consistent standards. This deficiency should be corrected.

EPA's David Sabock made a useful suggestion at the September 7 public meeting: The Bay Agreement signatories could collectively request that EPA assume responsibility for promulgating Baywide water quality standards for the States, to more efficiently achieve this important objective. The Bay States should seriously consider such an approach. Unified hearings and scientific analyses could save time and money, and the adoption of consistent water quality standards for toxics (which, after all, must be a high priority for all states under the provisions of Sec. 303(c)(2)(B) of the Act) would be advanced rapidly.

In general, the Bay States would benefit from a unified triennial review cycle that would enable them to better share their analytical capabilities and to persuade EPA where to focus its research dollars and energies in developing new water quality criteria documents. Even if the States do not wish to adjust their entire triennial review cycles, the adoption of Baywide water quality standards would provide a golden opportunity to put

all States on the same cycle at least for review and revision of standards for the key Bay watershed.

EPA is also in better position to pioneer the development of both microlayer criteria and sediment criteria. There is clear evidence that contaminated sediments are contributing to Bay ecosystem degradation,¹⁰ and that standards are needed to ensure protection of affected species.

IV. Actual Toxics Reductions

Improving interstate coordination, agreeing on priorities and adopting consistent water quality standards are only prerequisites to the real goal of the Basinwide Toxics Reduction strategy -- to "control toxic discharges to the Bay system ... to protect water quality, aquatic resources and human health"¹¹ Ironically, this focal point, namely actual control of toxics, is the outline's weakest link. It is addressed only with vague "example milestones," which are virtually impossible to assess. We strongly concur that the signatories should agree on short term and long term milestones for achieving toxics reductions, but find it difficult to comment on the adequacy of the draft outline when only a few "example" milestones are cited.

¹⁰ As long ago as 1983 the CBP reported that "research has shown a relationship between the levels of toxic compounds found in the sediments in certain areas, and the survival of individual organisms and the resulting health of the ecosystem." Chesapeake Bay Program: Findings and Recommendations, September, 1983 at 31.

¹¹ Chesapeake Bay Agreement at 5.

As discussed above, Section 304(1) of the Act provides a mandatory, uniform scheduling deadline for achievement of controls on point sources of toxics. The Section 304(1) deadline is the outside date for implementation of point source controls, although the Bay states can and should agree on more expeditious permit modifications and controls for priority sites in the watershed.

While Section 304(1) provides the outside deadline for completing NPDES permit revisions, within that framework each Bay State's timetable for completing needed permit modifications should be fully coordinated with other States in the watershed. This will enable the development of wasteload allocations and TMDLs that protect important areas of the Bay receiving wastes from more than one State.

In addition, the Strategy should explicitly state that toxics control programs will address toxicity from POTW discharges as well as from other point sources. Upgrades in pretreatment program requirements, including both improved NPDES permit limits for POTWs and improved local limits and categorical standards enforcement for indirect dischargers, are as important to toxics control as improved NPDES permit limits for point sources. The strategy's timetable for achieving pretreatment program improvements, like all other 304(1) program requirements, must result in completion of the process within the Act's deadlines (although it should focus first on imminent health and

environmental problems like the Patapsco, Elizabeth and James Rivers).

The Strategy should contain a commitment to include NPDES toxicity limits -- not simply testing or evaluation requirements -- in each major discharger's permit, in addition to limits for specific toxic contaminants. All major industrial dischargers and pretreatment POTWs, and any other dischargers known to discharge any toxic pollutant or suspected of causing toxicity, should have such limits.¹² Simply including toxicity reduction evaluation requirements in NPDES permits is not enough. Moreover, the Bay states should commit to agreeing on a consistent measure of toxicity (e.g., appropriate test organisms and chronic and acute screening values) within this triennial

¹² The February 1988 report of the Implementation Committee indicates that "[t]he Chesapeake Bay Program is tracking the implementation of biomonitoring at facilities considered to have a high potential to release toxic substances. Facilities where biomonitoring is required are to be identified in the Point Source Atlas [under development]." "A Commitment Renewed," Restoration progress and the course ahead under the 1987 Bay agreement, February 1988, at 57. However, here as elsewhere the Bay Program office simply accepts each State's decision regarding which facilities should be subject to biomonitoring; similarly, while the report details the number of permittees in each signatory state subject to toxicity reduction evaluation limits in permits, the report only underscores the lack of consistency in limiting toxicity through the NPDES process. Rather than simply report on those permittees that individual states choose to place under monitoring requirements, or report that each state has established a different protocol for TRE permit requirements, the Program should implement consistent programs basinwide for biomonitoring and toxicity limits. The Atlas should be composed of all facilities meeting an agreed-upon standard for needing biomonitoring; then the Program or some other centralized authority should monitor to ensure that the biomonitoring and toxicity limits are included in each appropriate NPDES permit.

review cycle, to facilitate writing consistent toxicity limits in NPDES permits.

The adoption (discussed above) of consistent water quality standards for toxics on a Baywide basis should lead expeditiously to the consistent adoption of water quality-based limits into NPDES permits. This, in turn, will require the coordinated development of wasteload allocations.

In addition to consistent approaches to permit limits for toxics, the Bay agreement signatories should establish consistent approaches to monitoring and self-reporting for potential toxics dischargers. For example, the signatories should commit to requiring a minimum of monthly self-monitoring for toxics for all major dischargers in the watershed.

Similarly, for nonpoint sources of toxic pollutants, the strategy should be more specific in identifying the particular toxics reduction steps to which each State must commit. For example, for controlling pesticide contamination, the States should commit to completing an initial assessment of potential surface and groundwater problems attributable to pesticide use within the timetable of Section 319's management plan.¹³ Decisions then should be jointly reached as to whether the use of all or certain pesticides should be banned or restricted in particular critical areas. The States should commit to, and present in the strategy, mutually acceptable procedures and

¹³ The Strategy document should not devote extensive space to describing the difficulty of achieving toxics reduction goals.

schedules for banning or restricting the use of pesticides impairing or threatening the Bay resource.¹⁴

Concurrently with standard controls for NPDES discharges, improvements should be sought in the management of industrial sources of NPS pollution. Signatories should commit to incorporating best management practices for site controls (e.g., to prevent stormwater runoff from on-site storage piles at industrial facilities) into NPDES permits for industrial dischargers on the same expeditious schedule as the more traditional outfall-by-outfall permit limits.

Specific timetables for the review and modification of hazardous waste production, transportation and storage activities should also be included in the strategy. Similarly, coordinated specific timetables for the review and modification of waste reduction activities should be part of the Bay toxics control strategy.

C. Focus on Vigorous, Consistent Enforcement

The NPDES program relies heavily on self-reporting and self-monitoring to ensure its success. Similarly, the Pretreatment program (with the added difficulties inherent in a system where the discharge pipe of the facility is not easily monitored by a third party) relies to a large extent on the cooperation of regulated facilities. Superfund reporting requirements and RCRA

¹⁴ Ironically, the 1983 Program Report provides more specifics on controlling NPS toxics than the outline for the 1988 Strategy. See Sept. 1983 Framework for Action at 46.

hazardous waste management programs also depend upon voluntary compliance.

Experience has shown that self-monitoring and -reporting is only as good as the compliance monitoring and enforcement muscle of the State and Federal authorities that back up voluntary compliance with outside oversight. Yet, the Bay states' outline is silent on the need for a baywide commitment to enforcement of toxics generation, control and reduction requirements. We strongly urge that a new subsection addressing enforcement needs be added to the strategy. Particularly once all signatory States have in place consistent water quality standards and permit limits, it will be critical to Baywide toxics control that all authorities can be expected to bring to bear swift, sure punishment for violations.

The signatories should agree to establish minimum resource and staffing commitments for enforcement and compliance monitoring purposes. For example, the states should commit to hire and train sufficient inspection personnel to make a minimum of two on-site visits per year to each major direct and indirect discharger (both industrial and municipal), by the August 1989 deadline for Section 304(1) reporting. They should reach consensus on initiating enforcement actions against permit violators once some relatively low (predetermined) threshold of violations has been passed;¹⁵ and that on assessing appropriately

¹⁵ EPA's guidance regarding enforcement of pretreatment program requirements provides a useful model for the types of considerations the States should address in their enforcement

stiff penalties for violations.¹⁶ The signatories should commit to conducting annual audits of each pretreatment facility discharging to the Bay watershed, with agreed-upon Baywide minimum standards for program acceptability, including, among other things, minimum levels of enforcement and compliance monitoring on the part of the pretreatment authority of its own industrial users.

CONCLUSION

At this point the Bay Agreement signatories have developed an Agreement, a Framework for Action and a Draft Outline of a Strategy for Toxics Reduction. The strategy itself still lies ahead. Meanwhile, a number of critical mandatory deadlines for achieving Baywide toxics reduction are swiftly approaching. Expeditious and aggressive action on the part of the Bay signatories is needed now, to develop and to implement the many elements of a coordinated, effective toxics reduction action plan.

policy. However, the Bay States should establish far more stringent and swift enforcement mechanisms in the Bay watershed than the ones set by EPA. See Pretreatment Compliance Inspection and Audit Manual for Approval Authorities, EPA, July 1986; Guidance for Reporting and Evaluating POTW Noncompliance with Pretreatment Implementation Requirements, EPA, September 1987.

¹⁶ The EPA Civil Penalty Policy provides a useful example for the Bay states to consider in arriving at consistent penalty assessments.



COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD
2111 Hamilton Street

Richard N. Burton
Executive Director

Post Office Box 11143
Richmond, Virginia 23201-1143
(804) 367-0086

MEMORANDUM

SUBJECT: ~~DEVELOPMENT OF THE CHESAPEAKE BAY BASINWIDE TOXICS~~
~~REDUCTION STRATEGY~~

TO: Interested Persons

FROM: Richard N. Burton
Chairman, Water Quality Task Group

COPIES: Water Quality Task Group Members; Keith J. Buttlesman, COE;
Bernard J. Caton, OFA; and Alan E. Pollock, CBO

In order to continue the involvement of interested persons in the development of the Basinwide Toxics Reduction Strategy, the Water Quality Task Group has scheduled a public meeting to receive comments and suggestions on specific milestones that should be included in the Basinwide Strategy, especially with respect to nonpoint source toxics.

The meeting is scheduled for:

Wednesday, September 7, 1988
10:00 A.M.
Hall of States, Room 239
444 North Capitol Street
Washington, D.C.

We believe the most important part of the entire Strategy process will be developing and reaching agreement on realistic, yet challenging, milestones for toxics reduction within the Chesapeake

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Bay basin. This will be a difficult process for those of us working in the point source area, and an extremely difficult one for the nonpoint source and contaminated sediment areas.

We welcome any insights and suggestions you have on this most critical part of the Toxics Strategy. Written comments would be most helpful.

If you have any questions, you may contact either Bernard J. Caton at (804) 367-0120 or Alan E. Pollock at (804) 367-6431.

RNB:WQGRP13:jmv

DRAFT
OUTLINE FOR
Basinwide Toxics Reduction Strategy

1. INTRODUCTION

- o COMMITMENT: by December 1988, to develop, adopt and begin implementation of a basinwide strategy to achieve a reduction of toxics consistent with the Water Quality Act of 1987 which will ensure protection of human health and living resources. The strategy will cover both point and nonpoint sources, monitoring protocols, enforcement of pretreatment regulations and methods for dealing with in-place toxic sediments where necessary.
- o Brief background of Chesapeake Bay toxics problems.
- o Description of the structure and contents of the strategy. To address the different types of toxic problems in the Bay, the Strategy will use a tiered approach. Those toxic problems with identified control programs will be covered in detail in the Strategy. Other, less defined toxics problems will be identified (e.g. microlayer contamination); development of control strategies for these will await results of monitoring and research programs.
- o Description of any major issues or problems encountered in developing the basinwide strategy including how they are addressed by the Strategy.

2. TOXICS ASSESSMENT IN THE CHESAPEAKE BAY

A. Toxics Loading Inventory

- o Explanation that a complete baseline, similar to nutrients, cannot be established for toxic loads at this time due to the lack of monitoring data and that a simple accounting of amounts may not provide a direct indication of toxicity.
- o Include a commitment that the signatories to the Agreement would begin the process of developing a Toxics Loading Inventory (TLI) of the Bay for the major source areas:
 - * Point Sources: municipal, industrial, and federal
 - * Nonpoint Sources: agricultural, urban, and atmospheric deposition

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It is recognized that for certain source areas, such as atmospheric deposition, estimating toxic loads will be extremely difficult to do and most likely will never be as accurate as point source loading estimates. The main purpose of the TLI is to aid in measuring and reporting on progress of toxic reduction programs. The inventory may be more detailed in toxic hot spot areas, such as the Elizabeth River or Baltimore harbor, which are receiving much attention at this time. Sources of information include NPDES permit files, SARA Title III Inventory data, and other monitoring programs.

- o Include a workplan and schedule for each of the major source areas for identifying compounds and the means of collecting the data in order to initially develop and eventually expand the TLI. Initial focus on those toxic compounds discharged by point sources that appear on the 307(a) list.
- B. Identifying Toxics of Concern
- o Commit to initiate process of identifying toxic compounds of particular concern for the Chesapeake Bay.
 - o Develop and implement special toxics monitoring programs for effluents, ambient waters, sediments, and tissue as appropriate
- C. Evaluation and Upgrade of Toxics Analytical Capabilities
- o Using CBP funds, commit to conduct a Baywide survey of the analytical capabilities for toxics in both the public and private sectors for meeting the needs of toxics control, monitoring, and research programs within the Bay watershed.
 - o Based upon the results of the survey develop appropriate plans of action at the federal and state levels to meet the identified needs.
3. WATER QUALITY STANDARDS AND HABITAT REQUIREMENTS FOR TOXICS
- o Discuss importance of adopting and using consistent water quality criteria, standards, and habitat requirements for toxics.

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- o Commit to adopt necessary water quality standards for toxics in accordance with the CWA and EPA's regulations and guidance.
- o Commit to consider the recommendations contained in the Chesapeake Bay Program report, Habitat Requirements for Chesapeake Bay Living Resources, and the guidance for those toxic pollutants not adopted as water quality standards in toxics management programs.

4. Basinwide Approach to Toxics Reduction

A. Point Sources

- o Establishment of short term and long term milestones for point source programs including target dates for meeting milestones.

Example Milestones:

1. Date by when all major discharges will have chemical and/or biological Toxics Monitoring Programs (TMPs) included in their permit;
2. Date by when all appropriate discharges will have Toxic Reduction Evaluations (TREs) included in their permit.

B. Nonpoint Sources

- o Description of the more complex nature of accurately identifying potential impacts and dealing with nonpoint sources of toxics.
- o Establishment of short term and long term milestones for nonpoint source programs including target dates for meeting the milestones.

Example Milestones:

1. The milestones may include source identification, program development, waste reduction programs, and other control strategies.
2. For atmospheric deposition, the milestones may primarily involve research, monitoring, and suggested actions of a national scope.

C. Contaminated Sediments

- o Establishment of short term and long term milestones including target dates for meeting milestones.

Example Milestones:

1. Commit to designing a monitoring framework to identify location and extent of contaminated sediments.
2. Commit to studies that will expand our knowledge of the processes effecting the release of toxics from the sediments into the water column and bioaccumulating in the food chain.

5. MEASURING PROGRESS

- o Jurisdictions agree to develop and implement various methods to aid in measuring progress in toxic reduction programs throughout the Bay watershed. These methods will be used for internal program evaluations as well as for public education.
- o Accounting methods can present data by jurisdiction, river basin, or targeted region for discharges of toxics from point and nonpoint sources.

Example Methods:

1. Keep account of the number of point source dischargers that are operating under a TNP or TRE program.
2. Keep account of the volume of wastewater flow that is considered acutely toxic or chronically toxic as demonstrated by biological monitoring, and the volume no longer toxic due to toxic reduction programs (incorporate degree of toxicity).
3. Keep account of the reduction in the toxic loads discharged due to toxic control programs using the Toxic Loading Inventory and discharge monitoring data.

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6. STEPS TOWARDS REFINING THE BASINWIDE STRATEGY

- o Identify existing problems and emerging issues needing more research and monitoring.

Examples:

1. Microlayer contamination
 2. Bioaccumulative compounds
 3. Effects of toxics on living resources, especially using indicators more sensitive than standard acute and chronic bioassays
- o Identify the specific actions with timetables as the steps to follow in refining the Basinwide Strategy.

Example:

1. Commit to developing a plan of action for increasing coordination of programs and agencies to ensure that cross-media impacts are addressed
- o Include commitment to review progress of Toxics Strategy on an annual basis.
 - o Recommend that a complete reevaluation of the progress and overall direction of the Basinwide Toxics Strategy be conducted by July 1992 (which follows the CWA date for implementation of the Individual Control Strategies).

7. APPENDICESAppendix A - Toxic Requirements of the 1987 Clean Water Act

- o Review of the major State actions required by the Act: adopting toxic criteria as standards; identifying waters with problems due to toxics (long and short lists); and developing Individual Control Strategies (ICS) for identified water bodies.
- o Review of the major EPA actions, both in Headquarters and Region III, that are required by the Act.

Appendix B - Jurisdiction Appendices

Each jurisdiction to develop an Appendix to address, as appropriate, the following toxics issues:

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A. Identification of Known Toxic Problem Areas

- c Include description of the waters the jurisdictions have listed under Section 304(1) of the CWA.
- o Include general description of other waters of potential concern due to toxics.

B. Point Source Programs

- o Description of the jurisdiction's current plans for developing Individual Control Strategies in response to Section 304(1) of the CWA.
- o Description of existing point source toxic control programs that ensure protection for human health and living resources (include history, purpose, accomplishments, and future direction, as appropriate):
 - * NPDES permit program
 - * Biological and chemical monitoring of effluents
 - * Pretreatment program
 - * State regulations and policies for toxics
 - * Toxic assessment and monitoring programs

C. Nonpoint Source Programs

- o Description of existing nonpoint source toxic management programs for the following areas that ensure protection for human health and living resources (include history, purpose, accomplishments, and future direction, as appropriate):
 - * Agricultural pesticides
 - * Urban stormwater
 - * Hazardous waste and Superfund programs
 - * Atmospheric deposition.

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D. Contaminated Sediments

- o Description of major areas with contaminated sediments.
- o Description of dredging activities and programs disposing of and dealing with contaminated sediments (include history, purpose, accomplishments, and future direction, as appropriate).

AEP:OUTLINTF:jmv

POTOMAC ELECTRIC POWER COMPANY

1900 PENNSYLVANIA AVE., N. W.

WASHINGTON, D. C. 20066

EDWARD F. MITCHELL
PRESIDENT

October 3, 1988

The Honorable George J. Mitchell
Chairman, Subcommittee on
Environment Protection
176 Senate Russell Office Building
Washington, D. C. 20510-1902

Dear Senator Mitchell:

I welcome your invitation to submit testimony for the record on the Environmental Protection oversight hearing which reviews the Chesapeake Bay programs.

My testimony is attached and follows the guidelines suggested in your letter of September 14, 1988.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Edward F. Mitchell".

enclosure

TESTIMONY

MR. EDWARD F. MITCHELL
ON
THE CHESAPEAKE BAY RESTORATION

PEPCO is pleased to have the opportunity to provide the Congressional Subcommittee on Environmental Protection with comments on the progress of Chesapeake Bay restoration efforts. As a major electric utility we use the waters of the Bay system in providing electric service to many of the Bay' residents and businesses. We have long appreciated the significance of this National Resource and have made a major investment in insuring that our facilities are operated in compliance with the regulations developed to protect Bay. In fact, we have gone well beyond these requirements and have developed a Chesapeake Bay Initiatives Support Program to demonstrate our commitment to do our part in the restoration. One of the major contributions of our program has been the construction and operation of a striped bass aquaculture facility which at the end of this year will have stocked well over half a million stripers into the Bay. In addition, we have played an active role in the Bay cleanup planning process and feel we can meaningfully contribute to your evaluation of restoration programs.

We comment on the specific issues raised by the Subcommittee as follows:

Issue 1:

The Chesapeake Bay Program was authorized in the Clean Water Act Amendments of 1987. Are changes or improvements to this Act or other environmental laws needed to enable you to accomplish the objectives of the Chesapeake Bay program and the 1987 Bay Agreement?

PEPCO was pleased to see the importance of the Chesapeake Bay our Nations largest and most productive estuary recognized in the Clean Water Act. Restoring the Bay due to its size, complex problems and the fact that its boundaries fall within three states and the District of Columbia require Federal resources and coordination of activities. We believe the regulatory framework is in place for Bay cleanup. What is now required is to provide the resources necessary to achieve the goals of the 1987 Chesapeake Bay Agreement.

Issue 2:

What additional legislation, Federal funding or program resources are needed to assure effective implementation of the commitments made in the Bay Agreement?

PEPCO feels there are a number of areas where additional resources or funding are needed to effectively implement the commitments made in the Bay Agreement.

1. Developing programs for achieving the goals for the "Living Resources" section of the Agreement have been difficult due to a lack of scientific understanding of the ecosystem and water quality criteria necessary to provide protection for the Bay's aquatic organisms. Money is needed for research in order to determine the nature and amount of cleanup necessary to insure protection of living resources at a minimum cost. Decisions made in the absence of adequate information either fail to protect resources or result in excessively burdensome costs. As competing demands increase on our resources we must insure their effective use.

2. Effective management of resources and strategies used to implement the Bay cleanup can only be achieved if adequate information is made available in a timely manner on the results of our actions. Federal coordination and assistance is essential in the development and implementation of a comprehensive monitoring program. EPA's development of the Bay model has been a great help in developing the cleanup strategy. Improving our ability to use such tools for decision making will require input from a well designed monitoring program. Federal Agencies such as the Environmental Protection Agency, the National Oceanic and Atmospheric Administration and the U. S. Fish and Wildlife Service have the resources and experience to develop and coordinate such a program.

3. Nutrients have been identified as the single largest contributor to the Bay's current problems. Continued assistance is needed by Communities located on the Bay and its tributaries to upgrade the level of sewage treatment, one of the major sources of nutrients. Many of these communities have suffered economic setbacks as a result of the Bay's problems and need economic assistance to achieve nutrient reduction goals. Assistance is also needed by Bay's agricultural industry in order to reduce nonpoint source nutrient loading. Nutrient runoff from farmland is a major contributor to nutrient loading. However, the plight of the farmer is well known and they will need help to do their part in restoring the Bay.

Issue 3:

What improvements could be made in interagency cooperation and coordination?

PEPCO believes one of the major strengths of the current Bay Agreement has been the effective communication between EPA, Maryland, Virginia, Pennsylvania and the District of Columbia. They have worked cooperatively together and have insured that the entire Bay community including the private citizen, businesses and numerous Bay related organizations have had an opportunity to participate in developing the cleanup program. We feel continuation of such communication is essential to achieving the restoration of the Bay.

Issue 4:

How can the Federal government coordinate environmental response to deal with coastal degradation problems in a more comprehensive fashion?

Managing coastal degradation problems will require careful land use planning and zoning. We have no specific recommendations at this time for better coordinating the Federal government environmental response.

Issue 5:

What new initiatives should be undertaken to supplement those outlined in the Bay Agreement?

We feel the major omission in the current Bay Agreement is the lack of a longterm strategy. EPA's Bay model projects that if nutrient inputs were dramatically reduced today it would take over 20 years to see a significant improvement in the Bay's water quality due to the large accumulation nutrients in the sediments. Yet the life of the Bay agreements is approximately the same as the current State Administrations which are participating in the agreement. It is important that a longterm strategy be developed which is consistent with current projections of the time required to complete the cleanup and which will provide the cleanup program with continuity.

Issue 6:

Based on your experience with the protection of the Chesapeake Bay, do you have comments or suggestions for the design of programs to protect other estuaries or coastal areas around the country?

PEPCO believes that one of the most important factors in dealing with an issue as complex as the restoration of the Chesapeake Bay, a large multijurisdictional resource, is cooperation. Little can be achieved in a project of this magnitude unless all the stakeholders are willing to work together. The willingness of the States, the District and Federal Agencies to work together is a model which can be used for implementing other major resource restoration efforts.


Regional Planning Council

 2225 North Charles Street Baltimore, Maryland 21218-5767 (301) 554-5600
 Dennis F. Rasmussen, *Chairman* Guy W. Hager, *Executive Director*

October 3, 1988

The Honorable George J. Mitchell
 Chairman
 Subcommittee on Environmental Protection
 U.S. Senate
 Washington, D.C. 20510-6175

Dear Chairman Mitchell:

In response to your letter of September 14th, I am enclosing five copies of testimony on the Chesapeake Bay program for your subcommittee. The testimony is by Mr. Dennis Rasmussen, Chairman of the Regional Planning Council and was approved by the Council at its meeting on September 30th.

I think that Mr. Rasmussen's testimony makes it clear that local governments and their regional councils must be involved as full partners in the Bay program if its goals are to be met. Only a few additional actions are necessary to create effective State/regional/local land and water resource partnerships. The testimony indicates what those actions are.

I am also enclosing our annual report which describes the composition and work of the Council.

Our Council appreciates the work your subcommittee is doing. Please let us know if we can be of further help.

Sincerely,

 A handwritten signature in dark ink, appearing to read 'Guy W. Hager'.

Guy W. Hager
 Executive Director

Enclosures

State of Maryland

Anne Arundel County Baltimore City Baltimore County Carroll County Harford County Howard County

APPROVED BY REGIONAL
PLANNING COUNCIL ON
9/30/88

TESTIMONY OF DENNIS F. RASMUSSEN
CHAIRMAN OF THE REGIONAL PLANNING COUNCIL
CONCERNING COORDINATED FEDERAL/STATE/REGIONAL/LOCAL
TO PROTECT THE CHESAPEAKE BAY

Significance of the Baltimore
Region to the Chesapeake Bay

The Baltimore Region covers less than a quarter of the State's area. However it has a major impact on the Chesapeake Bay as a metropolitan development area, similar to that of the Washington Region and the Norfolk-Hampton Region. The Baltimore Region contributes three times as much nitrogen from all sources to the Bay as the average acre of land in the State and four and a half times as much phosphorus.

Coordinated Land and
Water Resource Planning

Local governments in the Baltimore Region early on took account of the fact that water flowed across jurisdictional boundaries and that cooperation among local governments was essential in order to protect water quality. In 1976 the Regional Planning Council was designated as the clean water planning lead agency for the Baltimore Region. It and local governments in the Baltimore Region signed an intergovernmental agreement to work together to protect water quality in the Baltimore Region. By 1983 they had produced a clean water plan for the Baltimore Region which was adopted by all the member local governments, by the Governor of Maryland and by the U.S. Environmental Protection Agency.

This plan is now being implemented. As part of this effort, in 1984 a Reservoir Watershed Management Agreement was adopted by four Baltimore Region local governments (Baltimore City, Baltimore County, Carroll County, and Howard County). Also, in 1984, the Regional Planning Council and the six major local governments in the Baltimore Region adopted the 1984 Interlocal Chesapeake Bay Partnership Agreement. This Agreement accepted the goal of the 1983 Interstate Agreement and pledged the cooperation of governments within the Baltimore Region to achieve these goals.

The Regional Planning Council consists of executive, legislative, and planning board leaders of the major local jurisdictions in the Baltimore Region as well as state agency representatives and citizens. Governor Schaefer in testifying to you said that growth must be channeled and managed. The RPC works with the State to do that. RPC provides a means by which local governments can coordinate their water quality and land use planning with one another and with State agencies. The Regional Planning Council is mandated by State law to develop a General Development Plan for the Baltimore Region. The clean water plan has been adopted as part of the Regional Planning Council's General Development Plan. Through this joint planning process, land use planning and clean water planning can be coordinated for the Baltimore Region. This is of vital importance. Unless land use plans are coordinated with water use plans we are going to have costly problems and will fail to develop our opportunities.

The regional clean water plan, because it was adopted by the Governor, defines the roles and coordinates the work of the Regional Planning Council and State agencies concerned with water quality. Thus, we have in place in the Baltimore Region a comprehensive planning process and a plan which can help protect the Chesapeake Bay through integrated water quality and land use planning and implementation.

Examples of Accomplishments to Date

The Regional Planning Council and its member local jurisdictions are working to implement these plans through such means as the following:

- o construction, operation, and maintenance of sewage treatment plants and rehabilitation of sewage conveyance systems;
- o administration of stormwater control and sediment control programs;
- o support of agricultural nonpoint source controls through contributions to local soil conservation districts;
- o review of rezoning requests to make sure that impact on streams, wetlands and reservoirs is minimized;
- o review of development proposals within watersheds to make sure that water quality impact is minimized;
- o coordination of land use and water resource plans to make sure that land use goals and water quality goals are coordinated;
- o placing priority on the correction of failing septic systems in sensitive watershed areas;

- o Two of our governments, Howard and Anne Arundel Counties, are taking comprehensive action to implement the Patuxent River water quality plan;
- o Carroll County is planning for protection of its surface and groundwater resources and new legislation has strengthened its ability to protect its water bodies;
- o Anne Arundel County is doing water quality planning on a watershed basis and is developing action strategies to implement these plans. It also uses citizen groups to monitor water quality and to assist in plan implementation.
- o Baltimore City is testing ways of "retrofitting" stormwater management ponds to improve their ability to improve water quality. The Regional Planning Council has published a report on how existing urban areas can be retrofitted to reduce pollution.
- o Baltimore County has launched a major waterway improvement program for shoreline erosion control, waterway dredging, stormwater retrofitting and stream restoration. It is developing policies to protect steep slopes and to provide forested buffers along streams to minimize the impact of development on streams and wetlands;
- o Harford County has implemented a resource protection zone to protect its streams and sensitive natural areas.

- o Three local jurisdictions, including my county, the Regional Planning Council, and state agencies are working together to protect water quality in our drinking water reservoirs. This is an excellent example of local/regional/State cooperation which could serve as a model for other watersheds.
- o All of our local governments have developed Chesapeake Bay Critical Area plans and the Regional Planning Council is using remote sensing technology to aid these jurisdictions in protecting wildlife habitat along the bayfront.
- o All local governments are providing in their capital Improvement Programs funds for improvements in such water quality facilities as sewage treatment, stormwater, and others.

Needed Work

There is need, however, for much more to be done; for example, regional and local clean water planners need to work with citizens so that their concerns about the environment can result in better water quality enforcement. We need to work more extensively to coordinate land use and water resource planning at the watershed level. We also need more effort in designing and testing water quality management practices so that we can single out those which are most cost-effective. With respect to nonpoint pollution work needs to be done on monitoring and control. Finance of stormwater facilities and mainenance needs

to be re-thought. And, we need to work together to deal with toxics. In addition, there could be better coordination among the several regional councils in Maryland concerning their water quality planning activities.

The Growing Local/Regional/State/Federal Partnership
for Cooperative Water and Land Resource Planning

There is great interest by the regional councils in water quality action planning. The Metropolitan Washington Council of Governments, like the Regional Planning Council, has been designated by the U.S. Environmental Protection Agency and by State and local jurisdictions as lead agency for water quality action planning in its metropolitan area. The Tri-County Council for Southern Maryland is very interested in expanding its activities in water quality planning and councils in Western Maryland and the Eastern Shore are also interested in water quality protection.

The major problem limiting further work by regional councils in water quality protection is lack of funding. Regional councils which are designated as water quality planning agencies for their areas should be used in a maximum way by State and Federal governments. This would allow local governments through their membership on regional councils to become real partners with the State and Federal government in clean water work.

Recommendations:

I have the following recommendations:

1. Legislation:

At the State level, there is great opportunity within existing legislation for state clean water partnership with local governments through regional councils. The first step might be for the State to call together representatives of regional councils within the State to further develop working relationships with the State on Chesapeake Bay-related water quality issues. I think it will be found that their interest and enthusiasm for this endeavor is very high. The next step then is to sketch out in consultation with the councils a multi-year strategy for State, regional and local clean water work. Much of this work has been done through the 1987 Bay Agreement and related documents. The Maryland Department of the Environment has played a major role in developing the current state strategy, especially for nutrient control. As part of a cooperatively-developed federal/state/regional/local strategy the State would coordinate the water quality activities in the several regions which affect other regions and ensure that available funding is targetted to high priority activities.

If more Federal and State funding became available to regional and local agencies, there would be more incentive for local jurisdictions to provide more local matching funds. This is especially true of RPC which is funded under a mandated state formula. Great positive leverage could be generated with this change in the funding mix.

2. Additional Legislation, Funding or Other Resources Needed:

Before major new legislation to assure implementation of the Chesapeake Bay Agreement is developed, we need concerted local/regional/State effort to implement the present legislation. At the Federal level, the major need is to continue funding the sewage facility construction grant sections of the Federal Clean Water Act at the authorized levels. Also, funding at the authorized levels of Section 306 of the Coastal Zone Management Act should be continued.

It is vitally important that authorized Federal funding for implementation be maintained, otherwise inflation will continue to raise the cost of implementing our clean water plans and meeting Federal clean water goals. As Governor Schaefer testified to your Committee on September 20th, "A strong Federal partner is critical if we are going to be successful in restoring the Bay to health."

Additional Federal and State funds may be necessary to implement the bay agreement's policy of reducing nitrogen effluent from sewage treatments in order to meet the agreed to 40 percent reduction in nutrients flowing into the bay. This could be very costly.

Toxics, especially in the Baltimore Harbor, may pose a problem. We will be working with local and State agencies to see what activities might help solve the problem in this region.

3. Improvements in Interagency Cooperation and Coordination:

We have in the Baltimore Region a very successful cooperative State/regional/local transportation planning process. This process coordinates all modes of transportation planning in the Baltimore Region. It is funded under the Federal Highway Act with funds which are a percentage of the Federal highway construction program. About 90 percent of the funds passed from the Federal government to the State are passed down to regional agencies and local governments for highway planning and programming.

As you know, the Federal Clean Water Act came out of the same committee which developed the Federal highway program. The provisions in the legislation for Federal/State/regional/local coordination are very similar. However, there has not been the emphasis on coordination and pass through of funding in water quality planning as there has been in highway planning. The difference seems to be in the approach of the responsible Federal agency. In the case of the Federal Department of Transportation, the Department simply stated, "there must be adequate State/regional/local coordination in highway planning or the planning and construction funds will be cut off."

The Federal lead agency for water quality planning is the Environmental Protection Agency. The agency has encouraged State/regional/local cooperation and in fact, as I mentioned previously, has approved regional action plans

for clean water; but it has not emphasized cooperative local/regional/State clean water planning and related funding other than to meet the minimal requirements in the Federal Clean Water Act. The Federal legislation is already adequate in regard to cooperation and coordination. Professional staffing at the regional level must be maintained to be fully effective and the potentials for coordination must be fully realized. What is needed now is more vigorous effort by the Environmental Protection Agency and by State water quality agencies to increase the level of cooperation, coordination and funding pass through to the State-designated regional clean water agencies.

All the ingredients for a highly effective Federal/State/regional/local partnership already exist. It would be a simple task to bring this partnership up to a much higher level of effectiveness.

4. Coordination of Environmental Responses to Coastal Degradation Problems:

Coordination is necessary between the Water Quality Management Planning Program administered by the Environmental Protection Agency under the Federal Clean Water Act and the Coastal Zone Management Program administered by the National Oceanographic and Atmospheric Administration under the Coastal Zone Management Act. In

the Regional Planning Council these two environmental programs are being coordinated by being assigned to a single professional staff section. In addition, there is need for other Federal agencies such as the Corps of Engineers, Forest Service, and Fish and Wildlife Service to coordinate with local governments on a more systematic basis. The strengthened partnership I recommend would improve this coordination.

5. New Initiatives to Supplement the Bay Agreement:

The strengthened Federal/State/regional/local partnerships I recommended previously would stimulate regional and local initiatives. I have mentioned many of the initiatives already underway. The strengthening of the partnerships would expedite communication among local governments and State and Federal agencies leading to broaden application of innovations.

6. Applicability of Our Experience to Other Estuaries and Coastal Areas Around the Country:

Information sharing with other local, regional, State and Federal agencies around the country concerned with problems similar to those which we are facing would further stimulate the development of desirable new initiatives to protect water resources. The exchange of information through such means as conferences and newsletters could be encouraged both by the concerned Federal agencies and by

State government in coordination with their designated regional clean water agencies.

I am pleased to have had this opportunity to present testimony to you related to strengthening local/regional/State/Federal partnerships for protection of the Chesapeake Bay. Please do not hesitate to contact me if the Regional Planning Council can be of further help to you in your work.

SIERRA



CLUB

POTOMAC CHAPTER

October 3, 1988

Senator George J. Mitchell
 Subcommittee on Environmental Protection
 Committee on Environment and Public Works
 Washington, D.C. 20510-6175

Chairman Mitchell and Members of the Subcommittee:

The health and restoration of the Chesapeake Bay is a regional priority for the Sierra Club and an environmental challenge for us all. The Sierra Club is extremely pleased with the cooperative effort now underway with the adoption of the 1987 Chesapeake Bay Agreement. This agreement underscores the necessity for a joint, regional effort, combining the expertise and resources of state and federal government. While progress is beginning at the state level in designing programs that will aid in the sought-after recovery of Chesapeake Bay, additional National leadership and support is critical.

The Chesapeake Bay continues to decline in water quality and living resources. Current legislation is inadequate, particularly at the Federal level. Below I have outlined the areas of concern, what problems are implied, and recommended actions the Federal government needs to take to protect and restore one of this country's most unique environmental and economic resources, Chesapeake Bay.

CLEAN WATER: point and non-point source toxic and nutrient pollution.

A. Toxics:

1. The Problem: The regulation of toxic discharges into the Bay and its tributaries is painfully inadequate. Only direct discharges into water are regulated through NPDES permitting under the Clean Water Act, and then for only a limited number of toxics. Discharges into municipal sewers, which are incapable of handling these toxics, often results in untreated toxics entering our waterways. Concern also arises from the inevitability of these harmful substances entering the food chain. An increasing threat to the Bay are oil spills which can be catastrophic as petroleum within an estuarine environment is remarkably persistent and highly toxic. The Bay's microlayer, which shows a 10 to 1,000 times higher concentration of toxics than found in the water below demonstrates the intensity of the problem.

...To explore, enjoy, and protect the nation's scenic resources...

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2. Recommended Actions:

- a. The Federal government must take a leadership role in identifying and regulating the chemicals entering the Bay, focusing first on those known to be most threatening and destructive. Mandatory water quality standards must be set by EPA.
- b. EPA must assist the states in identifying the sources and paths of the chemicals entering Chesapeake Bay to ensure enforcement of the standards and elimination of toxic discharges.
- c. EPA must enforce the states' compliance with the Clean Water Act by calling for uniform monitoring, inspection, and enforcement.
- d. Pretreatment, authorized under the Clean Water Act, is critical to the reduction of toxics entering the waterways through wastewater treatment plants. EPA and the states must endeavor to ensure that pre-treatment programs are in place and operating as intended by Congress.
- e. Oil Spills: regulations resulting in safe transport of oil and gas through the Bay are necessary and may include tighter licensing procedures, more stringent inspections, and more sophisticated monitoring of loading, transfer and in-transit loads. Maximum penalties must be given to polluters. The Coast Guard must be funded greater surveillance and quicker response to avoid and ameliorate spills.
- f. Pesticides: while we intentionally introduce these chemicals into our environment, much remains to be known about the details of the effects of pesticides, although it is very clear that they result in serious adverse environmental impacts. The majority of these chemicals enter the bay, its tributaries and groundwater through runoff and therefore require regulation of their use.
 - Currently pesticides are not tested before going on the market. EPA must require indepth testing of the environmental and health effects of all pesticides before they are used. The burden of proof must shift to the pesticide manufacturers from EPA to show that these chemicals are safe to use.
 - Application procedures must be monitored and higher standards implemented.
 - Alternative methods of pest control must be researched and used whenever possible.
 - The Federal government must end its current practice of paying the producers for cancelled pesticides.
- g. Reduce the use of Toxics--Source Reduction: fewer chemicals used by industry will result in less toxics potentially entering the Bay. Steps to reduce chemical wastes--using lower concentrations and less toxic substances, using mechanical rather than chemical processes, and recycling solvents--should be encouraged, and in some cases mandated, by EPA.
- g. Groundwater: Congress and EPA must act immediately to adopt and implement a non-degradation policy of this priceless limited

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resource. EPA's present groundwater policy encourages creeping contamination and short-sightedness and must be replaced.

B. Nutrients

1. The Problem: An overabundance of nutrients, specifically nitrogen and phosphorous, entering the bay has been identified as the principal cause of declining water quality within the bay. EPA took the lead in calling for a 40 percent reduction of nutrients entering the bay from both point and non-point sources; steps must now be taken to accomplish this laudable goal.
2. Recommended Actions
 - a. Wastewater Treatment Plants: nutrient removal, known as advanced wastewater treatment (AWT), is imperative to meet the 40 percent reduction in both nitrogen and phosphorous called for in the Agreement. EPA must revise its policy to enable AWT plants to receive federal funding, and necessary funds must be appropriated.
 - b. EPA needs to require states to incorporate nutrient effluent limits in permits for major sewage treatment plants and substantial industrial dischargers.
 - c. Non-point source nutrients enter the bay from two dominant sources, air (see next section) and agriculture. Sediment run-off from agriculture must be minimized through:
 - Mandating Best Management Practices (BMPs) which incorporate water pollution abatement practices for those lands adjacent to the Bay and its tributaries.
 - Broadening and extending the Conservation Reserve Program to remove from production highly erodible lands adjacent to waterways.
 - Curtailing Federal programs which in any way promote or subsidize poor land use practices.
 - Adequate funding provided for Section 319 of the Clean Water Act which requires the states to identify state waters impaired by agriculture and other non-point source pollution and write a management plan to eliminate the source of impairment--to date no funds have been appropriated.

CLEAN AIR: airborne toxics and acid rain.

A. Toxics

1. The Problem: Until recently overlooked, toxics which are emitted into the air and fall into the bay and its tributaries are now known to be a major player in the Bay's demise. Toxics from industry, incinerators and vehicles are thought to be the cause of elevated toxicity levels in even the most remote portions of the bay.
2. Recommended Actions:
 - a. A strengthened Clean Air Act with a toxics provision as in S 1894, now awaiting action on the Senate floor, must be passed immediately.
 - b. Emission standards must be adopted and enforced for incinerators such

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as proposed in S 1984 and HB 2517.

B. Acid Rain

1. The Problem: nutrification and acidification.
 - a. Acid Rain is a major threat to the Bay. A recent study by the Environmental Defense Fund reports that 25% of all nitrogen entering the bay from man-made sources is coming from acid percipitation, falling on hundreds of miles of watershed which filter into the bay and into the bay itself. Excessive nutrient loading causes oxygen depletion and growth of algae which is toxic to fish and other marine life.
 - b. Eleven percent of the streams within the region are acidic--almost 1,350 streams have already been acidified (pH levels below 5.0) and approximately 5,000 more are sensitive to future acidification. Furthermore, headwaters of many of these streams are spawning grounds, highly suseptible to "acid shock" from pulses of acidic rainfall and snowmelts, killing fish and inhibiting reproduction. These streams then flow into the Bay, bearing large doses of nitrogen, adding to the eutrophication of the bay. The majority of this acid rain is generated outside of the Bay's watershed requiring national legislation.
2. Recommended Actions: Again, a strong Clean Air Act must be passed; one that incorporates acid rain provisions calling for a 12 million ton reduction in sulfur dioxide and a four million ton reduction in nitrogen oxides, the major components of acid rain, by the year 2000.

HABITAT AND LIVING RESOURCES: wetland protection, land acquistion, and fisheries management.

- A. Wetlands: eliminate the unavoidable loss of wetlands and work toward a net increase.
 1. The Problem: We are just beginning to understand the integral part wetlands play within the Bay ecosystem as wildlife habitat and incubation areas, pollution control mechanisms, and a groundwater recharger. Yet under Section 404 of the Clean Water Act, wetlands are not protected. Rather, allowable uses are regulated. Thus, thousands of acres of critical tidal and non-tidal wetlands have been replaced by development, agriculture, forestry, and storm water retention areas.
 2. Recommended Action: Stronger wetland protection regulations must be passed. These must stem from the goal of no overall wetlands loss and call for a net increase. Loopholes and weaknesses within § 404 that must be changed include:
 - a. A broader definition of wetlands that includes floodplains (the entire 100 year plain), forested wetlands, isolated waters (many of which are connected to interstate or navigable waters via groundwater), and headwaters.
 - b. The goal must be to protect wetlands through the sequential process

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of avoid, rectify, reduce, and compensate project impacts.

- c. In order to protect wetlands, all activities which impact wetlands must be regulated including degradation (including run-off from nearby activities), burning, flooding, vegetation alteration, etc.
- d. In deciding which activities should be permitted, the public benefit of wetlands--the protection of the ecosystem, open space, wildlife habitat, water quality, aesthetics, etc--must be given equal weight to the economic benefits of the activity. Further, assessment of cumulative impacts must be a part of the permit granting process.
- e. Where permitted uses have unavoidable losses, criteria and standards are necessary to ensure no net loss, requiring compensation through the creation of new wetlands. The compensation policy must not allow alternatives, such as providing a striped bass hatchery, in lieu of wetlands construction.
- f. The fact that compensation or mitigation will be provided must not be considered a benefit of the project (and thereby used as a justification for IRS approval)--the intent is to avoid any unavoidable impact, and allow only those, with appropriate mitigation and compensation, from permitted activities.
- g. Strict monitoring and enforcement of the mitigation or compensation activities must be a part of the legislation, with penalties for noncompliance.

B. Land Acquisition

1. The Problem: Development pressures are resulting in the loss of critical open space within the Chesapeake Bay watershed. These lands include sensitive habitats and well as much need recreation areas. While the Land and Conservation Fund exists, the meager funding allocations of the past eight years render the program only minimally effective. Aggressive action is needed now to begin to protect the limited resources available through land, development rights and easement acquisition.

2. Recommended Action: Passage of the American Heritage Trust Act.

C. Fisheries Management

1. The Problem: not only is the ecological aspects of the Bay threatened, so are the economic resources. The decline in many of the Bay's fish and shellfish are a serious concern not only to those who make a living off fishing the Chesapeake, but also to those concerned about the Bay states economies. Reduced numbers of the Bay's living resources requires federal attention because of the need for cooperative interstate management and coordinated research and restoration programs.

2. Recommended Actions.

- a. Reauthorization of the Magnuson Fishery Conservation and Management

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Act which governs fisheries management in federal waters. The act should incorporate placing absolute limits on harvest based on biological data, as recommended by a blue ribbon panel appointed by NOAA Administrator, Dr. Anthony Calio.

- b. Continuation and expansion of the habitat programs of the National Marine Fisheries Service and Fish and Wildlife Service. Efforts should include reopening thousands of miles of coastal tributaries to migratory fish which are now blocked by dams and other obstructions.
- c. Continued federal assistance in the revival of the striped bass by reauthorizing the Striped Bass Conservation Act (HR 4124) and extension of federal funding for the Emergency Striped Bass Research program.

RECYCLING AND SOLID WASTE MANAGEMENT

1. The Problem: The potentially destructive consequences of our nation's solid waste management policies are also harming Chesapeake Bay. Mass-burn incinerators and landfills both raise staggering health, environmental, economic and political questions. Toxic materials (household and industrial) which are placed in landfills may ultimately leech into groundwater supplies while those disposed of in mass-burn incinerators result in toxic air emissions (discussed previously) as well as toxic ash. The Sierra Club is committed to conserving natural resources and reducing waste. Waste management systems with these goals decrease the environmental costs of natural resource extraction, minimize pollution, promote the sales of recovered materials, and encourage, by subsidy if necessary, the repair and reuse of discards.
2. Recommended Actions:
 - a. Federal, as well as state, laws are needed that will create new incentives for waste reduction, recycling, and materials recovery.
 - b. Because of the known adverse health effects of the by-products of combustion in solid waste incinerators, they should be considered only after a comprehensive and well-funded program of waste reduction, recycling, and materials recovery has been implemented and a detailed assessment of possible health effects from potential emissions has been completed. While implementation will occur at the local and state level, these priorities must be EPA policy, supported with adequate funding for research and program implementation.
 - c. Hazardous household wastes must be regulated, possibly under RCRA, to eliminate them from landfills and incinerators.
 - d. National Packaging Laws--Source reduction is essential to reduce the waste stream and remove toxics. Five of the six most toxic chemicals on EPA's top 20 list are found in plastic. Plastic and styrofoam packaging must be reduced; including the elimination of all CFCs (2% of styrofoam still contain CFCs). Biodegradable rather than

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photodegradable (which require sunlight to decompose and therefore do not breakdown in landfills) plastics should be emphasized. Federal regulations should require manufacturers of new products to consider environmentally sound post-consumer use and disposal of their design and minimize waste in production.

- e. The United States must take responsibility for its toxic wastes and no longer export these to foreign nations (95% of the hazardous wastes exported go to Canada).
- e. Classify incineration ash as hazardous waste and treat accordingly.

These are the recommendations the Sierra Club feels are critical to the restoration and protection of Chesapeake Bay. For course, these actions will have beneficial impacts throughout this country and help in the fight to save many other endangered bays, estuaries and coastal waters. On a larger scale, these actions are necessary for the protection of human health.

We thank this committee for seeking input on how Congress can assist EPA and other federal agencies as key partners in the Chesapeake Bay Agreement. This partnership and the actions promised are precedent-setting; a model that, if successful, can be used to help all our nations ailing water resources. Furthermore, it will only succeed with the leadership and technical and financial support of the federal government.

Sincerely,



Debra D. Lee
Potomac Chapter Conservation Chairman
Chair, Appalachian Region Conservation Committee,
Chesapeake Bay Subcommittee
925 Windwhisper Lane
Annapolis, MD 21403
(301)267-9218



September 30, 1988

Hon. George J. Mitchell
 Chairman, Subcommittee on
 Environment Protection
 U.S. Senate
 Washington, D.C. 20510-6175

Dear Mr. Chairman:

The Soil and Water Conservation Society is pleased to respond to the questions raised in your letter of September 14, 1988. We too are concerned about the future of the Bay.

1. The Food Security Act of 1985 had several conservation provisions that do need added support. The Conservation Reserve Program (CRP) is off to a good start, nation-wide, but Bay states are lagging in signups. More attractive rental payments would help bring in more acres. Also are more incentives for tree and wildlife plantings. The other features of the Farm Bill—Swampbuster, Sodbuster, and the Conservation Compliance requirements need strong leadership from USDA to achieve their objectives. Maryland is to be commended for adding a CRP bonus in July of 1988.

The potential for legislation includes: making certain other environmentally sensitive lands eligible for the CRP and providing for easements and other features to assure that CRP land does not return to intensive use after ten years.

2. Additional emphasis should be given to incentives for land-users to adopt a low-input/sustainable agriculture system. Several groups are working on this and additional research, extension and technical assistance funding is needed. The concern for groundwater quality should also have attention.
3. The work of the agencies, federal, state, and local, needs constant monitoring to assure that each is doing their task. The red tape and regulations seem to be building up. Strong central direction and oversight is a high priority.
4. This is a good question that should be a topic for an independent study group to make recommendations to the U.S. Congress. The experience on the Great lakes, and in other areas, could bring valuable lessons for use here.
5. The Bay Agreement will take new initiatives, most will be unpopular and difficult to perform. The ailing Chesapeake Bay cannot survive into the next century unless severe growth limits are adopted within the whole watershed. The Critical Areas law in Maryland is testing if statewide

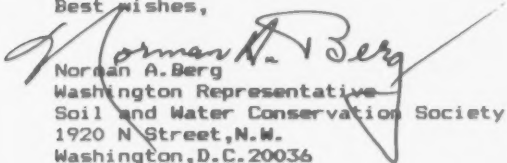
land-use plans are feasible. Tougher zoning laws and their administration, reforestry programs, and greater protection of wetlands, highly erodible soils, and other sensitive soils are examples of initiatives that require broad support and understanding from the public. Future growth strategy should include ways to make agriculture a more stable, attractive, and profitable use of land and water. Development for urban uses continues to take the most important farmlands out of agriculture, forever. An increase of 2 million more people in the three bayfront states by 2020 will place an almost impossible task on those concerned about water quality, and other features, that would improve the Chesapeake Bay.

6. I have been an active citizen in Maryland and elsewhere for many years. My experience as Chairman of a Land Use Study, as the Great Lakes were impacted, for the International Joint Commission in the 1970's, may be of some value to your work.

There are no easy, simple, quick solutions to a problem of this magnitude. My work has been in the field of soil conservation, non-point source pollution, and wise land use. There are many good stewards of land and water. They need to be encouraged. As your Subcommittee continues to monitor and legislate for improvement in law and policy for water quality and related issues please accept our offer of support in any manner you deem appropriate.

Thanks for the invitation to submit comments to your memo.

Best wishes,


 Norman A. Berg
 Washington Representative
 Soil and Water Conservation Society
 1920 N Street, N.W.
 Washington, D.C. 20036
 Ph: 202-659-5668



THE UNIVERSITY OF MARYLAND
SEA GRANT COLLEGE PROGRAM

October 4, 1988

Honorable George J. Mitchell
United States Senate
SR-176 Russell Senate Office Building
Washington, DC 20510

Dear Senator Mitchell:

Thank you for your letter of September 14, 1988, and for this opportunity to submit written testimony on the Chesapeake Bay restoration effort. I have been with the University of Maryland Sea Grant College for almost ten years and am now serving as acting director of that program.

In answer to your questions about federal legislation, it is imperative that we have continued support not only for the Clean Water Act, but also for the Coastal Zone Management Act and for the Sea Grant College Program. As you know, there must also be adequate appropriations to make these laws meaningful.

In lieu of creating new programs to deal with problems facing the Chesapeake Bay and other coastal waters around the nation, I would recommend adequate funding of current programs and increased cooperation among them. In some cases regular meetings among agencies have proven an effective means for coordination of efforts; I would also suggest training sessions for those with decision-making authority to ensure that they have the benefit of the most up-to-date information available. Personnel of these agencies also need to be secure in the belief that common goals are shared at the highest levels of administration.

In terms of the future of the Bay Program, there are three areas which should be addressed here: monitoring, enforcement, and research. I will say the least about monitoring and enforcement and the most about research.

On the whole, I think the Environmental Protection Agency and the participating state and academic institutions should be congratulated on the scope and efficiency of the monitoring effort. While we have not yet achieved perfection, it should be recognized that there is a large-scale effort in place and that numbers of different agencies and institutes are cooperating quite diligently in order to make the monitoring program effective. Over time, we will be gathering an increasingly accurate snapshot of the state of the Bay and the character of long-term trends. One of the greatest challenges facing the monitoring effort for the future may well be the detection of meaningful levels of trace elements in the Bay that could prove toxic for living organisms. I will address this further below.



Room 1224, H. J. Patterson Hall
College Park, Maryland 20742 (301) 454-5690

Although the area of enforcement is not one in which the University becomes directly involved, we need to assure that those who set limits for permits and requirements have the benefit of ongoing research and monitoring. Further, every effort should be made to enforce the Clean Water Act and other requirements we already have on the books. Federal installations should be subject to these regulations as well. These are good laws and should be upheld--there's no excuse for our doing otherwise.

I have several things to say about the area of research, largely because I think this aspect of the Bay restoration effort has been given short shrift.

When the Bay restoration program began, it came on the heels of a six-year twenty-six million dollar study by the Environmental Protection Agency. At that time, the prevalent feeling was that we had "done enough research" and now needed to move into action. This sentiment was understandable, and it was perhaps necessary in order to stir movement in the areas of implementation and enforcement. Unfortunately, few seem to understand the role of research where an estuary like the Chesapeake Bay is concerned.

First of all, the Bay is constantly changing. If we had thoroughly researched the Bay during John Smith's era, we would have a wonderful baseline of information, but we would not necessarily understand very much about the way the Bay is operating right now. While the six-year EPA study of the Chesapeake described many of the fundamental problems of the Bay, much remains to be learned about how the Bay functions as an ecosystem, especially under various stresses and especially given the accelerated rate of change we seem to be seeing in the Bay. For example, we still know very little about how toxicants affect Bay organisms and microorganisms or about how those organisms may in turn process and affect the toxicants themselves.

Further, though we now know much more about nutrient dynamics in the estuary than ever before, many questions still remain about exactly what levels of nutrients become detrimental and exactly how the process of overnutrification harms various forms of Bay life. Too often, resource managers seem to rely on numerical and other models to give them comprehensive answers to questions about the state of the Bay. But models are only as good as the knowledge available to develop them; too often scientific "guesstimates" lead to computer-generated numbers which have little basis in reality. In addition, the questions asked are often not the right ones or they are asked in an uninformed way, simply because we do not know enough to predict with a high degree of certainty how the estuary will react under various conditions.

The modeling question remains a significant one, since billion-dollar decisions may be made on the basis of these models.

One program which has proven especially valuable in refining our understanding of how the estuary works has depended on a small research effort run cooperatively by the Maryland and Virginia Sea Grant programs, using funds made available by Congress through the Clean Water Act. These funds have focused on the causes and effects of low dissolved oxygen in the Chesapeake Bay but have helped uncover much more. By joining efforts to investigate various levels of the food chain, the members of this research team have helped to show how a changing environment has brought about a shift in the estuarine food web, an alteration which ultimately affects what kind of organisms--fish and shellfish--can inhabit the estuary.

I would encourage additional multi-state cooperation in such research areas, and I think the Sea Grant effort has proven an effective model for the oversight of competitive, peer-reviewed scientific investigation. A similar effort should now take place with a focus on toxicants in the Bay and their effect on the food web. It will be important for this to be a fundamental, Bay-wide, high quality research effort. Beyond a simple monitoring or measuring of toxicant levels, this investigation will need to uncover the very subtle ways in which the Bay may be suffering from chronic contamination by what may be very low levels of heavy metals, chemical compounds and other pollutants.

In short, important areas for research include:

-Fisheries habitat and recruitment. We need to understand what is causing declines in stocks of fish and shellfish--especially during the critical first 100 days of life.

-Nutrients. We need to determine exactly how nutrients--especially nitrogen and phosphorus--are entering the Bay and how best to curb their influx.

-Toxicants. Of the thousands of chemicals that pour into the Bay each day, many are thought to be toxic--harmful to the aquatic life that normally thrive in the estuary. But we know too little about the effects of such toxicants on Bay organisms. How do various contaminants affect the reproduction and growth of fish and shellfish, especially during the early stages of life? How do we detect these impacts and determine which contaminants are most important to keep out of the Bay?

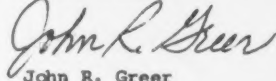
-Trophic Dynamics. The Chesapeake Bay depends on a complex food web to sustain its productivity. In recent years evidence points to a shift in this food web which diverts energy away from fish and shellfish and toward lower organisms, such as bacteria. If this change has occurred, how can we determine the causes? Can we "retune" the Bay to restore a properly functioning ecosystem that will support the living resources we want?

-Physical Processes. We need to understand how waves, storms and currents affect the normal processes of the estuary, including sedimentation and transport of both nutrients and toxicants. We need to investigate the effects, too, of long-term changes such as sea level rise.

Again, I would recommend caution in the creation of additional administrative mechanisms for multi-state, regional marine research efforts. The best approach would be to use mechanisms we have in place to assure that the maximum amount of funds can be channeled into the research itself and not into additional administrative costs.

I hope these remarks are of some use. We have much to be proud of in the Bay region, but we must be careful not to deceive ourselves into thinking that we have programs in place which will completely solve our problems or into believing that we fully understand exactly how the estuary functions. When people ask which we need--action or research--the answer must be that we need both.

Yours truly,

A handwritten signature in cursive script, reading "John R. Greer".

John R. Greer
Acting Director

JRG:wmw



VIRGINIA GRADUATE MARINE SCIENCE CONSORTIUM

Madison House 170 Rugby Road University of Virginia Charlottesville, VA 22903 (804) 924-5965

September 30, 1988

Senator George J. Mitchell
United States Senate
Chairman - Subcommittee on Environment Protection
Washington, DC 20510-6175

Dear Senator Mitchell:

Thank you for the opportunity to provide written testimony relating to the oversight hearing on Chesapeake Bay programs which was held on September 20 by the Subcommittee on Environmental Protection.

As Director of the Virginia Sea Grant College Program, I am heavily involved, both directly and indirectly, with various aspects of the Chesapeake Bay restoration efforts. Much of my direct involvement occurs through the research and education activities associated with the Virginia Sea Grant College Program and funding received through NOAA for research concerning the hypoxic/anoxic conditions which exist in the Bay. My less direct involvement with the Bay occurs through membership on the Scientific and Technical Advisory Committee (STAC) and participation on several working groups related to the Bay Program.

Concerning the set of questions posed in your letter of September 14, I would like to offer the following responses.

1. At this time, I do not see the need for changes or improvements to the Clean Water Act Amendments of 1987 or other legislation dealing with aspects of the Bay program. However, I believe it would be very helpful if some language could be developed in the committee report which indicates to agencies receiving funds for research related to Chesapeake Bay that the funds are to be used directly and totally for such research rather than being available, even in part, to support positions within the agencies, such as has happened within NOAA. This would enable the use of the funding for the purposes envisioned by the Congress rather than building the agency staffs.

2. As you might expect, the somewhat standard response to this question can be "such a program can be accomplished more quickly and efficiently with additional funding now, rather than dragging it out for many more years at lower funding levels". I believe a rather reasonable approach to funding and expectations has been reached to date. Our

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ability to generate, analyze and interpret new research data is roughly balanced with the speed at which program results can be effectively implemented by the governments involved, and this is balanced with the abilities of the states to provide their fiscal and regulatory commitments to the Bay restoration. We could move faster and with greater strides if provided with greater fiscal resources for research, but I am not convinced that the states are prepared to move ahead as rapidly. Certainly, scientific research could be initiated which would place the states and federal agencies in a much stronger position with regards to management and policy decisions if significantly increased funding were made available for specific and well planned research programs, such as the hypoxia/anoxia studies.

Thus, at this time, I believe the legislation in place is adequate to assure effective implementation of the Bay agreements, with the exception of stronger wetlands protection measures. In most cases, such legislation must emerge at the state level, and in fact is being considered through the Chesapeake Bay Commission.

3. Interagency coordination could be improved significantly if NOAA were made an equal participant with EPA insofar as the living resources issues are concerned. The Bay restoration has suffered, and will continue to suffer, from an inability to relate water quality parameters with living resources impacts, both positive and negative. If the living resource capabilities of NOAA were effectively paired with the water quality and monitoring capabilities of EPA and the state agencies, the entire Bay effort would have a much better chance of developing indices or procedures which will be able to relate changes in water quality with changes in living resource population levels. Perhaps NOAA should be given the same designation on the Implementation Committee as is given to EPA; thus, NOAA would become an additional signatory to the Bay agreements.

4. I think that a response to this question is similar to my response to #3 above. The current lack of high level recognition and coordination of living resources research and monitoring for input into the planning for future Bay restoration efforts will lead to the sudden realization that

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most, if not all, of the water quality monitoring efforts lack relevance, after a certain point, because they do not relate to living resource evaluations. EPA needs to recognize this at the highest agency levels, and NOAA needs to be included at those levels since that agency has the capabilities to provide the linkage.

5. There is a need for a focused and expanded effort to thoroughly understand the biological, physical and chemical processes which control the ecological functioning of Chesapeake Bay. For decades, the scientific community has piddled along with piecemeal investigations which are valuable on their own but which are not part of a larger plan aimed at being able to fully describe and predict the ecological behavior of the Bay. Even today, after nearly three decades of investigations into diseases affecting the oyster, we have conditions under which these same diseases are threatening to wipe out one of the keystone organisms in the Bay's food chain, and we can not fully explain why the diseases are having their increased impact at this time. Also, through recent funding via NOAA, we have begun to develop a much better understanding of the physical and biological processes which cause the seasonal low dissolved oxygen conditions in the Bay. But we do not have adequate funding to bring this work to a complete and timely conclusion and thereby produce the information upon which new Bay-wide policy and management decisions can be made for nutrient modelling and resource monitoring. A third example of an area in which initiative needs to be taken is toxics. The research community has only begun to scratch the surface of the multitude of questions involved with toxics and their effects upon the living resources; yet, managers are asking questions and needing answers for which there is little or no information. Increased and designated funding for focused programs, such as the three mentioned here, is necessary.

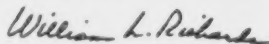
6. In my opinion, the efforts currently underway to restore the Chesapeake to some previous level of production and cleanliness are laudatory. The multi-jurisdictional approach and commitments made are unprecedented. We must not let them wilt on the vine without achieving their purpose. It is still a bit too early to declare the Chesapeake Bay effort an environmental success. Thus far, it is a political success, but the environmental proof is yet to be seen in measureable and documentable ways. Therefore, I would

Senator George J. Mitchell
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suggest that other states and/or regions keep an eye on the Bay program and begin discussions which will facilitate action in the future, perhaps with the Bay program as a model.

Again, let me thank you for the opportunity to provide input for your Subcommittee. If, after reading these comments, you desire further information or explanation, please do not hesitate to contact me.

Sincerely,



William L. Rickards
Director

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WASHINGTON SUBURBAN SANITARY COMMISSION

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October 4, 1988

The Honorable George J. Mitchell
Chairman
Subcommittee on Environment Protection
458 Dirksen Senate Office Building
Washington, D.C. 20510-6175

Dear Senator Mitchell:

This is in response to your letter of September 14, 1988, regarding the clean up efforts of the Chesapeake Bay. As a major water and sewer authority in the Bay region, the Washington Suburban Sanitary Commission is impacted by the decisions and programs associated with the Bay efforts. As well, we realize that our activities and efforts involving point and non-point source discharge control may influence the Bay, we hope overall in a positive way. To say the least, the WSSC has a vested interest in the direction and magnitude of the Bay clean up efforts.

We appreciate the opportunity to comment and offer these following thoughts:

- o Non-point source pollution from agricultural lands has been shown to be a major contributor of nitrogen and phosphorus to the Bay system and although there are existing laws (Food Security Act) and programs that are well intentioned, the fact is that agricultural soil conservation plans exist on only a small portion of the farms in the Bay's watershed. The list of reasons why this is so is extensive; however, it is apparent that lack of funding for technical positions at the Soil Conservation District level and a non-existent enforcement program are the main reasons.

There are long waiting lists of farmers who want conservation plans but, because of USDA cutbacks, there are not enough technicians to help farmers in a timely manner. There are also a large number of farmers who will not conform unless "pushed." Enforcement or disincentives (e.g., loss of tax exemption) is the only answer in these cases.

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In addition to agricultural areas, there are many urban stormwater and sediment control programs that are not up to par. In many cases, local governments must reallocate funding from these programs into other programs (roads, health care, etc.) that do not receive the same Federal or State funding as in the past.

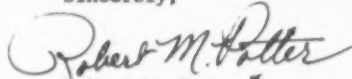
- o The Chesapeake Bay, being a complex aquatic system, is now only beginning to be understood. The scientific community uncovers new evidence about the pollution problems almost monthly and is still debating about which nutrient (nitrogen or phosphorus) is limiting in the Bay and in what parts. We fear that the clean up efforts, particularly discharge limits on nitrogen, may be forging ahead without adequate knowledge of the impacts on water quality. There is evidence in the literature to support the argument that removing nitrogen discharges in freshwater areas could cause nuisance blue-green algae blooms. In addition, we now understand that atmospheric deposition, via acid rain, could be introducing an amount of nitrogen that exceeds that which is being discharged by point sources. Answers to these questions need to be supplied if limited financial resources are to be optimally allocated. Cause and effect relationships based on sound technical understanding are necessary in contrast to assumptions and political interests. Only then can the cost effectiveness of nutrient removal be evaluated. We recommend greater Federal resources applied to research of the Bay's mechanisms.
- o Point source dischargers are now being faced with a two sided problem. In the past, conventional pollutants and, to a minor extent, some nutrients, were being removed under the NPDES Program which included funding. Today, we are being asked to remove both nitrogen and phosphorus to very low limits. These advanced waste treatment processes are ten fold more expensive than past processes and produce much more by-product (sludge) than before. The cost to remove nutrients increases geometrically (not arithmetically) as requirements become more and more stringent. In the face of these high costs comes the news of Federal funding cutbacks. There is a dire need for Federal grant funding to help point source dischargers comply with the mandates of the Bay program.

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- o As you know, the efforts to clean up the Chesapeake Bay are extensive, complex, and wide ranging and overlap States and municipal jurisdictions. There also appears to be some variance among the States' programs. Possibly the Bay Implementation Committee, if not the Executive Committee, could look at all of the State and local programs to see if they are properly funded and are headed in the right direction.

Again, the Commission appreciates the opportunity to comment and hopes that in some way we have contributed to better understanding the Chesapeake Bay and its problems.

Sincerely,


Robert M. Potter
Chairman

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